

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin, J. Lee Examiner #: 76060 Date: 9-16-2003  
 Art Unit: 1752 Phone Number 305-0504 Serial Number: 10085935 A  
 Mail Box and Bldg/Room Location: 9805 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

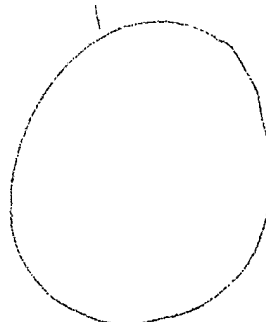
\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Silicon-containing polymer, resist composition &  
 Inventors (please provide full names): Takeda, Takanobu; Hatakeyama, Patterning  
Jun; Ishihara, Toshinobu; Kubota, Tohru; Kubota, Yasufui. Process  
 Earliest Priority Filing Date: 3-01-2002

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

- Please search for a silicon-containing  
 polymer comprising recurring unit of  
 formula (1) of Cl. #1



## STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>H. Fuller</u>	NA Sequence (#) _____	STN <input checked="" type="checkbox"/> _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>2</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>9/17/03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>25</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>20</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>20</u>	Other _____	Other (specify) _____

=> FILE REG

FILE 'REGISTRY' ENTERED AT 16:44:30 ON 17 SEP 2003  
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STRUCTURE FILE UPDATES: 16 SEP 2003 HIGHEST RN 586945-00-8  
DICTIONARY FILE UPDATES: 16 SEP 2003 HIGHEST RN 586945-00-8

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

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Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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FILE COVERS 1907 - 17 Sep 2003 VOL 139 ISS 12  
FILE LAST UPDATED: 16 Sep 2003 (20030916/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE L66

L42 STR

CH2:CH-Si  
3 1 2

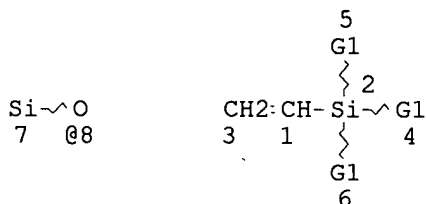
NODE ATTRIBUTES:

NSPEC IS RC AT 2  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
L44 9887 SEA FILE=REGISTRY SSS FUL L42  
L47 STR



← 1257 polymers

VAR G1=AK/8/CB  
NODE ATTRIBUTES:  
NSPEC IS C AT 2  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
L50 2829 SEA FILE=REGISTRY SUB=L44 SSS FUL L47  
L51 1257 SEA FILE=REGISTRY ABB=ON L50 AND PMS/CI  
L52 2398 SEA FILE=HCAPLUS ABB=ON L51  
L53 217 SEA FILE=HCAPLUS ABB=ON L52(L)?RESIST?  
L59 216 SEA FILE=REGISTRY ABB=ON 930-88-1/CRN  
L60 22348 SEA FILE=REGISTRY ABB=ON 108-31-6/CRN  
L61 3952 SEA FILE=REGISTRY ABB=ON 116-14-3/CRN  
L62 42 SEA FILE=REGISTRY ABB=ON L51 AND (L59 OR L60 OR L61)  
L63 17 SEA FILE=HCAPLUS ABB=ON L62  
L64 10 SEA FILE=HCAPLUS ABB=ON L63(L)?RESIST?  
L65 12 SEA FILE=HCAPLUS ABB=ON L53(L) PATTERN?  
L66 21 SEA FILE=HCAPLUS ABB=ON L64 OR L65

=> D L66 ALL 1-21 HITSTR

L66 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:671932 HCAPLUS  
DN 137:202031  
TI Preparation and patterning process of silicon-containing chemical  
amplification positive resist compositions  
IN Takeda, Takanobu; Hatakeyama, Jun; Ishihara, Toshinobu; Kubota, Tohru;  
Kubota, Yasufumi  
PA Shin-Etsu Chemical Co., Ltd., Japan  
SO Eur. Pat. Appl., 33 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM C08F030-08  
ICS G03F007-075; C08G077-00

applicant

CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1236745	A2	20020904	EP 2002-251419	20020228
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002348332	A2	20021204	JP 2002-47351	20020225
	US 2002168581	A1	20021114	US 2002-85935	20020301
PRAI	JP 2001-56543	A	20010301		
AB	Novel silicon-contg. polymers, which are obtained by copolymerizing vinylsilane with a compd. having a low electron d. unsatd. bond such as maleic anhydride, maleimide derivs. or tetrafluoroethylene, are suitable as the base resin in chem. amplified pos. resist compns. used for micropatterning in a process for the fabrication of semiconductor devices. The resist compns., which are sensitive to high-energy radiation, such as deep-UV light, laser beams, electron beams or X-rays, can form high aspect ratio patterns with high sensitivity and resolu. as well as improved resistance to oxygen or halogen gas plasma etching. Thus, maleic anhydride and trimethylvinylsilane were polymerized in THF using radical polymerization technique; the silicone polymer, photoacid generator, dissolution inhibitor were thoroughly dissolved in propylene glycol monomethyl ether acetate; the resist soln. was spin coated onto cured DUV-30/novolac resist substrate and then baked at 100.degree. for 90 s to form a resist film of 0.2 .mu.m, followed by exposing to laser beam, baking at 100.degree. for 90 s, and developing in TMAH to obtain a pos. pattern; the resist pattern was then evaluated in sensitivity, resolu., and etc.				
ST	silicon contg chem amplification pos resist compn patterning process; maleimide vinyl polymer semiconductor device radiation sensitive resist; maleic anhydride trimethylvinylsilane copolymer resist device				
IT	Positive photoresists (UV; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)				
IT	Phenolic resins, uses RL: NUU (Other use, unclassified); USES (Uses) (novolak, substrate layer; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)				
IT	Resists (pos.-working radiation-sensitive; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)				
IT	Electron beam resists (pos.-working; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)				
IT	Etching Semiconductor device fabrication (silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)				
IT	Polymers, preparation RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses) (silicon-contg.; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)				
IT	26702-38-5P, Maleic anhydride-trimethylvinylsilane copolymer 452912-28-6P, N-Methylmaleimide-trimethylvinylsilane copolymer 452912-29-7P 452912-30-0P, Trimethylvinylsilane-tetrafluoroethylene copolymer 452912-31-1P, Maleic anhydride-				

APP 11 (11)

vinylheptamethylcyclotetrasiloxane copolymer **452912-32-2P**,  
 Maleic anhydride-bis(trimethylsilylmethyl)vinylmethylsilane) copolymer  
 452912-33-3P, Maleic anhydride-vinylheptamethylcyclotetrasiloxane-1-  
 ethylcyclopentyl methacrylate copolymer **452912-34-4P**, Maleic  
 anhydride-bis(trimethylsilylmethyl)vinylmethylsilane-1-ethylcyclopentyl  
 methacrylate copolymer 452912-35-5P, Maleic anhydride-  
 vinylheptamethylcyclotetrasiloxane-2-ethyl-2-adamantyl methacrylate  
 copolymer **452912-65-1P**, Maleic anhydride-trimethylvinylsilane-1-  
 ethylcyclopentyl methacrylate copolymer

RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer  
 in formulation); PRP (Properties); PREP (Preparation); USES (Uses)  
 (cured and uncured; silicon-contg. chem. amplification pos.

**resist** compns. and **patterning** process thereof)

IT 409321-21-7 409321-23-9

RL: DEV (Device component use); MOA (Modifier or additive use); PRP  
 (Properties); USES (Uses)

(dissoln. inhibitor; silicon-contg. chem. amplification pos. resist  
 compns. and patterning process thereof)

IT 66003-76-7 66003-78-9

RL: DEV (Device component use); MOA (Modifier or additive use); PRP  
 (Properties); USES (Uses)

(photoacid generator; silicon-contg. chem. amplification pos. resist  
 compns. and patterning process thereof)

IT 84540-57-8, Propyleneglycol monomethyl ether acetate

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; silicon-contg. chem. amplification pos. resist compns. and  
 patterning process thereof)

IT 59269-51-1, Polyhydroxystyrene

RL: NUU (Other use, unclassified); USES (Uses)

(substrate layer; silicon-contg. chem. amplification pos. resist  
 compns. and patterning process thereof)

IT 81458-41-5, OFPR-800

RL: NUU (Other use, unclassified); USES (Uses)

(substrate; silicon-contg. chem. amplification pos. resist compns. and  
 patterning process thereof)

IT **26702-38-5P**, Maleic anhydride-trimethylvinylsilane copolymer

**452912-28-6P**, N-Methylmaleimide-trimethylvinylsilane copolymer

**452912-29-7P 452912-30-0P**, Trimethylvinylsilane-

tetrafluoroethylene copolymer **452912-32-2P**, Maleic

anhydride-bis(trimethylsilylmethyl)vinylmethylsilane) copolymer

**452912-34-4P**, Maleic anhydride-bis(trimethylsilylmethyl)vinylmethy

lsilane-1-ethylcyclopentyl methacrylate copolymer **452912-65-1P**,

Maleic anhydride-trimethylvinylsilane-1-ethylcyclopentyl methacrylate  
 copolymer

RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer  
 in formulation); PRP (Properties); PREP (Preparation); USES (Uses)

(cured and uncured; silicon-contg. chem. amplification pos.

**resist** compns. and **patterning** process thereof)

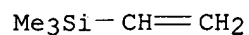
RN 26702-38-5 HCAPLUS

CN 2,5-Furandione, polymer with ethenyltrimethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 754-05-2

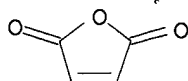
CMF C5 H12 Si



CM 2

CRN 108-31-6

CMF C4 H2 O3



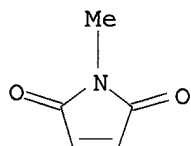
RN 452912-28-6 HCAPLUS

CN 1H-Pyrrole-2,5-dione, 1-methyl-, polymer with ethenyltrimethylsilane (9CI)  
(CA INDEX NAME)

CM 1

CRN 930-88-1

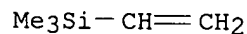
CMF C5 H5 N O2



CM 2

CRN 754-05-2

CMF C5 H12 Si



RN 452912-29-7 HCAPLUS

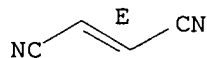
CN 2-Butenedinitrile, (2E)-, polymer with ethenyltrimethylsilane (9CI) (CA  
INDEX NAME)

CM 1

CRN 764-42-1

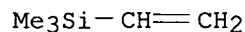
CMF C4 H2 N2

Double bond geometry as shown.



CM 2

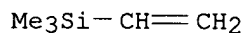
CRN 754-05-2  
CMF C5 H12 Si



RN 452912-30-0 HCAPLUS  
CN Silane, ethenyltrimethyl-, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

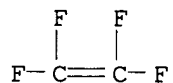
CM 1

CRN 754-05-2  
CMF C5 H12 Si



CM 2

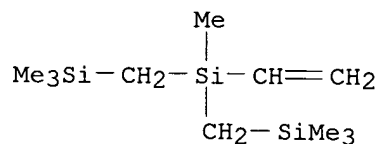
CRN 116-14-3  
CMF C2 F4



RN 452912-32-2 HCAPLUS  
CN 2,5-Furandione, polymer with 2,2,4,6,6-pentamethyl-4-vinyl-2,4,6-trisilaheptane (9CI) (CA INDEX NAME)

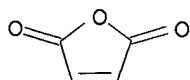
CM 1

CRN 16709-90-3  
CMF C11 H28 Si3



CM 2

CRN 108-31-6  
CMF C4 H2 O3

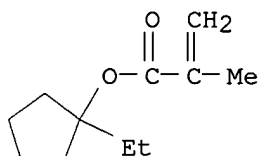


RN 452912-34-4 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with  
 ethenylmethylbis[(trimethylsilyl)methyl]silane and 2,5-furandione (9CI)  
 (CA INDEX NAME)

CM 1

CRN 266308-58-1

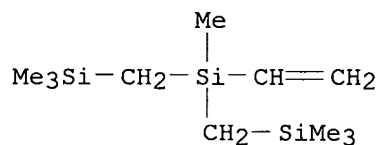
CMF C11 H18 O2



CM 2

CRN 16709-90-3

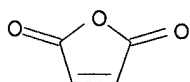
CMF C11 H28 Si3



CM 3

CRN 108-31-6

CMF C4 H2 O3



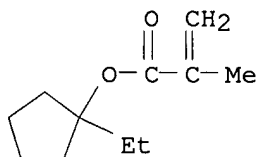
RN 452912-65-1 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with  
 ethenyltrimethylsilane and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

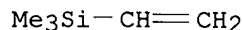


CMF C11 H18 O2



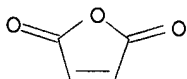
CM 2

CRN 754-05-2  
CMF C5 H12 Si



CM 3

CRN 108-31-6  
CMF C4 H2 O3



L66 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:436099 HCAPLUS  
DN 137:343813  
TI Preparation of trimethylsilyl group containing copolymer for negative-type photoresists that enable stripped by an alkaline solution  
AU Chiang, Wen-Yen; Kuo, Hsin-Te  
CS Department of Chemical Engineering, Tatung University, Taipei, 10451, Taiwan  
SO European Polymer Journal (2002), 38(9), 1761-1768  
CODEN: EUPJAG; ISSN: 0014-3057  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
AB Four copolymers contg. trimethylsilyl group were synthesized by soln. free-radical copolymerization catalyzed by azobisisobutyronitrile (AIBN) in 1,4-dioxane at 60.degree. C. The photoresists formulations contained the copolymer, a photosensitizer (dimethylaminoethyl methacrylate or diethylaminoethyl methacrylate), Michler's ketone and THF solvent. The copolymers had good thermal stability in the photoresist process, and these contg. cyclic maleimide group were the most stable. After irradiation by a deep-UV light and development with mixed solvent (Me iso-Bu ketone:2-propanol = 1:3), the developed patterns showed neg. images and

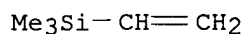
exhibited good adhesion to the silicon wafer without using any adhesion promoter. The resolu. of the resists was at least 1.75 .mu.m and the oxygen plasma etching rate was 1/6 of this of the hard-baked HPR-204 resist. These photoresists can be stripped by week alk. soln. such as sodium carbonate soln. (0.01 wt.%) after exposure. The above photoresists can be used as the top-imaging layers in a bilayer resist process.

- ST lithog neg photoresist trimethylsilyl group copolymer
- IT Negative photoresists
  - (lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT Etching
  - (plasma; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT Solubility
  - (soly. of copolymers contg. trimethylsilyl groups for photoresists formulations)
- IT Polydispersity
- IT Thermal stability
  - (synthesis and characterization of copolymers contg. trimethylsilyl groups and lithog. properties of neg. photoresists based on these polymers)
- IT Functional groups
  - (trimethylsilyl group; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 108-10-1, Methyl isobutyl ketone
  - RL: NUU (Other use, unclassified); USES (Uses)
  - (developer compn.; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 67-63-0, 2-Propanol, uses
  - RL: NUU (Other use, unclassified); USES (Uses)
  - (developer; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 7782-44-7, Oxygen, uses
  - RL: NUU (Other use, unclassified); USES (Uses)
  - (plasma etch; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 150-13-ODP, p-Aminobenzoic acid, amides with maleic anhydride copolymers **26702-38-5DP**, Vinyltrimethylsilane-maleic anhydride copolymer, amides, p-aminobenzoic acid 51176-40-ODP, Allyltrimethylsilane-maleic anhydride copolymer, amides, p-aminobenzoic acid 473988-36-2P, Allyltrimethylsilane-N-(4-carboxyphenyl)maleimide copolymer 473988-37-3P, Vinyltrimethylsilane-N-(4-carboxyphenyl)maleimide copolymer
  - RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
  - (prepn. and characterization of copolymers contg. trimethylsilyl groups and lithog. properties of neg. **photoresists** based on these polymers)
- IT 90-94-8, Michler's ketone
  - RL: MOA (Modifier or additive use); USES (Uses)
  - (resist compn. photoinitiator; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 105-16-8, Diethylaminoethyl methacrylate 2867-47-2, Dimethylaminoethyl methacrylate
  - RL: TEM (Technical or engineered material use); USES (Uses)
  - (resist compn. photosensitizer; lithog. characteristics of neg. photoresists contg. copolymers contg. trimethylsilyl groups and sensitizer of)
- IT 109-99-9, THF, uses

- RL: TEM (Technical or engineered material use); USES (Uses)  
 (resist solvent; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 67-68-5, DMSO, uses 68-12-2, DMF, uses 123-91-1, Dioxane, uses 144-55-8, Sodium hydrogen carbonate, uses 1310-73-2, Sodium hydroxide, uses
- RL: NUU (Other use, unclassified); USES (Uses)  
 (soly. of copolymers contg. trimethylsilyl groups for photoresists formulations)
- IT 497-19-8, Sodium carbonate, uses
- RL: NUU (Other use, unclassified); USES (Uses)  
 (stripping soln.; lithog. characteristics of neg. photoresists based on polymers contg. trimethylsilyl groups)
- IT 78-67-1, Azobisisobutyronitrile
- RL: CAT (Catalyst use); USES (Uses)  
 (synthesis and characterization of copolymers contg. trimethylsilyl groups and lithog. properties of neg. photoresists based on these polymers)
- IT 51176-40-0P, Allyltrimethylsilane-maleic anhydride copolymer
- RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis of polymers contg. trimethylsilyl groups for application in photoresists formulations)
- RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Anon; ACS Series 1983, 219
  - (2) Anon; ACS Series 1984, 226
  - (3) Chiang, W; Angew Makromol Chem 1993, V209, P25 HCAPLUS
  - (4) Chiang, W; Eur Polym J 1993, V29, P837 HCAPLUS
  - (5) Chiang, W; J Appl Polym Sci 1993, V50, P1007 HCAPLUS
  - (6) Chiang, W; J Appl Polym Sci 1993, V49, P893 HCAPLUS
  - (7) Chiang, W; J Appl Polym Sci 2002, V83, P2791 HCAPLUS
  - (8) Chiang, W; J Polym Sci Part A 1991, V29, P399 HCAPLUS
  - (9) Chiang, W; J Vac Sci Technol B 1997, V15, P299 HCAPLUS
  - (10) Chiang, W; Macromol Chem Phys 1994, V195, P591 HCAPLUS
  - (11) Czornyj, G; US 5446074 1995 HCAPLUS
  - (12) Kern, W; Handbook of semiconductor wafer cleaning technology 1993
  - (13) Kim, J; Polymer 1999, V40, P1617 HCAPLUS
  - (14) Kim, J; Polymer 2000, V41, P6939 HCAPLUS
  - (15) Minnema, L; Polym Eng Sci 1988, V28, P815 HCAPLUS
  - (16) Oishi, T; Polym J 1991, V23, P1409 HCAPLUS
  - (17) Reichmanis, E; ACS Series 1989, 412
  - (18) Reichmanis, E; J Polym Sci Polym Chem Ed 1983, V21, P1075 HCAPLUS
  - (19) Reichmanis, E; J Vac Sci Technol 1981, V19, P1338 HCAPLUS
  - (20) Tanaka, T; Jpn J Appl Phys 1993, V32, P6059 HCAPLUS
  - (21) Taylor, G; Solid State Technol 1984, V27, P145 HCAPLUS
- IT 26702-38-5DP, Vinyltrimethylsilane-maleic anhydride copolymer, amides, p-aminobenzoic acid
- RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (prepn. and characterization of copolymers contg. trimethylsilyl groups and lithog. properties of neg. **photoresists** based on these polymers)
- RN 26702-38-5 HCAPLUS
- CN 2,5-Furandione, polymer with ethenyltrimethylsilane (9CI) (CA INDEX NAME)

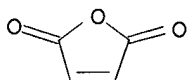
CM 1

CRN 754-05-2  
CMF C5 H12 Si



CM 2

CRN 108-31-6  
CMF C4 H2 O3

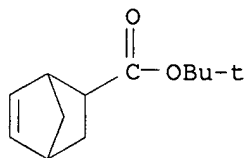


L66 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:276536 HCAPLUS  
DN 136:316930  
TI Resist composition containing silicon-containing vinyl copolymer  
IN Fang, Mao-ching; Tai, Ming-chia; Chang, Jui-fa; Liu, Ting-chun; Lin, Tzu-yu  
PA Industrial Technology Research Institute, Taiwan  
SO U.S. Pat. Appl. Publ., 7 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM C08F130-08  
NCL 526279000  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 76

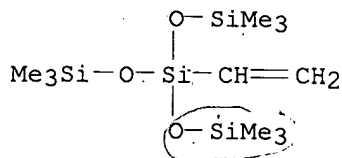
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002042485	A1	20020411	US 2000-749073	20001227
	US 6380339	B2	20020430		
	DE 10061675	A1	20020425	DE 2000-10061675	20001212
PRAI	TW 2000-89119569	A	20000922		
AB	A silicon-contg. vinyl copolymer suitable for use as a top layer resist in a bilayer resist system, includes a maleic anhydride repeating unit, a norbornene repeating unit with an acid-labile group, and a vinyl repeating unit with a silicon-contg. group.				
ST	bilayer resist semiconductor device manuf; silicon contg vinyl copolymer top layer resist				
IT	Coating materials (light-sensitive; resist compn. contg. silicon-contg. vinyl copolymer)				
IT	Microelectronic devices Resists Semiconductor materials (resist compn. contg. silicon-contg. vinyl copolymer)				
IT	Polymers, properties RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP				

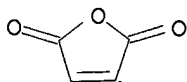
(Preparation); USES (Uses)  
 (silicon-contg.; resist compn. contg. silicon-contg. vinyl copolymer)  
 IT 66003-76-7, Diphenyliodoniumtriflate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (photoacid generator; resist compn. contg. silicon-contg. vinyl  
 copolymer)  
 IT 409358-38-9P **409358-39-0P**  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
 (Properties); TEM (Technical or engineered material use); PREP  
 (Preparation); USES (Uses)  
 (resist compn. contg. silicon-contg. vinyl copolymer)  
 IT **409358-39-0P**  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
 (Properties); TEM (Technical or engineered material use); PREP  
 (Preparation); USES (Uses)  
 (resist compn. contg. silicon-contg. vinyl copolymer)  
 RN 409358-39-0 HCAPLUS  
 CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1,1-dimethylethyl ester,  
 polymer with 3-ethenyl-1,1,1,5,5,5-hexamethyl-3-  
 [(trimethylsilyl)oxy]trisiloxane and 2,5-furandione (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 154970-45-3  
 CMF C12 H18 O2



CM 2  
 CRN 5356-84-3  
 CMF C11 H30 O3 Si4



CM 3  
 CRN 108-31-6  
 CMF C4 H2 O3



L66 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2001:496392 HCAPLUS  
 DN 135:99845  
 TI Positive-working photoresist composition containing alkali-soluble polymer with silyl group  
 IN Mizutani, Kazuyoshi; Yanami, Shoichiro  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 52 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-039  
 ICS C08F030-08; C08K005-00; C08L043-04; C08L101-00; G03F007-004; G03F007-075; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001188349	A2	20010710	JP 2000-303876	20001003
PRAI	JP 1999-298606	A	19991020		

AB The compn. comprises (A) a binder resin having a repeating unit bearing a structure  $(CH_2)_nSiR_1R_2R_3$  ( $R_1-3 = \text{alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy}$ ;  $n = 0, 1$ ) and a repeating unit bearing a group which decomps. by the action of an acid and increases the soly. in an alk. developer at the side chain, (B) a compd. generating an acid by the action of an actinic ray or radiation, (C) a solvent dissolving A and B, (D) an org. base compd., (E) a surfactant selected from a fluorosurfactant, a silicone surfactant, and a nonionic surfactant. The compn. shows high resoln. and gives patterns with rectangular cross section and is useful for manuf. of semiconductor device.

ST photoresist pos alkali soluble binder silyl group; acid generator

IT photoresist; surfactant photoresist org base

IT Polysiloxanes, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(KP 341; pos.-working photoresist compn. contg. binder with silyl group, acid generator, org. base, and surfactant)

IT Surfactants

(fluorosurfactants; pos.-working photoresist compn. contg. binder with silyl group, acid generator, org. base, and surfactant)

IT Surfactants

(nonionic; pos.-working photoresist compn. contg. binder with silyl group, acid generator, org. base, and surfactant)

IT Positive photoresists

(pos.-working photoresist compn. contg. binder with silyl group, acid generator, org. base, and surfactant)

IT Surfactants

(silicone; pos.-working photoresist compn. contg. binder with silyl group, acid generator, org. base, and surfactant)

IT 1122-58-3, DMAP 3001-72-7, DBN 6674-22-2, DBU 9016-45-9,  
Polyoxyethylene nonyl phenyl ether 137462-24-9, Megafac F 176  
216679-67-3, Megafac R 08  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
use); USES (Uses)

(pos.-working photoresist compn. contg. binder with silyl group, acid  
generator, org. base, and surfactant)

IT 249743-11-1P 314295-77-7P 336609-21-3P 336609-24-6P 336609-25-7P  
336609-27-9P 336609-31-5P, tert-Butyl acrylate-maleic  
anhydride-trimethylallylsilane-daljsdhf copolymer **340829-95-0P**  
348129-27-1P 348129-35-1P 348129-37-3P 348129-40-8P 348129-42-0P  
348129-43-1P 348129-45-3P 348129-49-7P 348129-52-2P 348129-55-5P  
349477-30-1P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. binder with silyl  
group, acid generator, org. base, and surfactant)

IT 57835-99-1, Triphenylsulfonium hexafluorophosphate 144089-15-6  
144317-44-2, Triphenylsulfonium nonaflate 153698-46-5,  
Triphenylsulfonium pentafluorophenylsulfonate 197447-16-8,  
Triphenylsulfonium 2,4,6-triisopropylphenylsulfonate 258872-05-8  
287925-54-6, Bis(p-tert-amylphenyl)iodonium tosylate 343629-51-6  
348129-65-7

RL: TEM (Technical or engineered material use); USES (Uses)

(pos.-working photoresist compn. contg. binder with silyl group, acid  
generator, org. base, and surfactant)

IT **340829-95-0P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. binder with silyl  
group, acid generator, org. base, and surfactant)

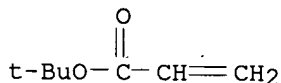
RN 340829-95-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with  
ethenyltrimethylsilane, 2,5-furandione and methyl 2-propenoate (9CI) (CA  
INDEX NAME)

CM 1

CRN 1663-39-4

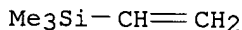
CMF C7 H12 O2



CM 2

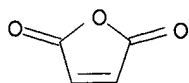
CRN 754-05-2

CMF C5 H12 Si



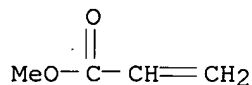
CM 3

CRN 108-31-6  
CMF C4 H2 O3



CM 4

CRN 96-33-3  
CMF C4 H6 O2

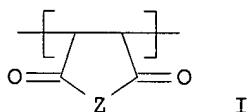


L66 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:496391 HCAPLUS  
DN 135:99844  
TI Positive-working photoresist composition containing vinyl copolymer with  
silyl group  
IN Mizutani, Kazuyoshi; Yasunami, Shouichiro  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 42 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-039  
ICS C08F220-10; C08F222-00; C08F230-08; C08K005-00; C08L033-04;  
C08L035-00; C08L043-04; G03F007-004; G03F007-075; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38, 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001188348	A2	20010710	JP 2000-303875	20001003
PRAI	JP 1999-298606	A	19991020		

GI



AB The photoresist compn. comprises (A) a binder resin whose soly. in an alk. developer increases by the action of an acid and having repeating units



CH<sub>2</sub>CH[(CH<sub>2</sub>)<sub>n</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>] (R<sub>1</sub>-3 = alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy; n = 0,1) CH<sub>2</sub>CY(LCO<sub>2</sub>Q) (Y = H, Me, cyano, Cl; L = bond, divalent linkage; Q = C<sub>5</sub>-20 tert-alkyl, alkoxymethyl, alkoxyethyl, isobornyl) and I (Z = O, NR<sub>3</sub>; R<sub>3</sub> = H, OH, alkyl, OSO<sub>2</sub>R<sub>4</sub>; R<sub>4</sub> = alkyl, trihalomethyl), (B) a compd. generating an acid by the action of an actinic ray or radiation, and (C) a solvent dissolving A and B. The compn. shows high resoln., less disappearance of rough pattern at the resoln. limit, and is useful for manuf. of semiconductor devices.

ST pos photoresist acrylic polymer silyl group; maleic anhydride acrylic polymer photoresist; acid generator photoresist

IT Positive photoresists

(pos.-working photoresist compn. contg. vinyl copolymer with silyl group)

IT Semiconductor device fabrication

(pos.-working photoresist compn. contg. vinyl copolymer with silyl group and acid generator for manuf. of semiconductor device)

IT 336609-21-3P 336609-24-6P 336609-25-7P 336609-27-9P 340829-96-1P  
348129-27-1P 348129-40-8P 348129-42-0P 348129-43-1P 348129-52-2P  
348129-55-5P 348137-36-0P **348137-37-1P** 348137-38-2P  
348137-39-3P 348137-41-7P 348137-43-9P 348137-44-0P 348137-46-2P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. vinyl copolymer with silyl group and acid generator)

IT 66003-78-9, Triphenylsulfonium triflate 144089-15-6 144317-44-2,  
Triphenylsulfonium nonaflate 153698-46-5, Triphenylsulfonium  
pentafluorophenylsulfonate 258341-95-6 258872-05-8 287925-54-6,  
Bis(p-tert-amylphenyl)iodonium tosylate 343629-51-6 348129-65-7  
348137-47-3

RL: TEM (Technical or engineered material use); USES (Uses)

(pos.-working photoresist compn. contg. vinyl copolymer with silyl group and acid generator)

IT **348137-37-1P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. vinyl copolymer with silyl group and acid generator)

RN 348137-37-1 HCAPLUS

CN 2-Propenoic acid, 2-ethoxyethyl ester, polymer with  
ethenyltrimethylsilane, 2,5-furandione and methyl 2-propenoate (9CI) (CA  
INDEX NAME)

CM 1

CRN 754-05-2

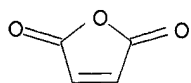
CMF C5 H12 Si

Me<sub>3</sub>Si-CH=CH<sub>2</sub>

CM 2

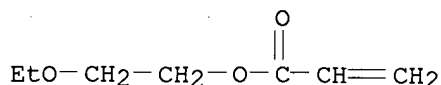
CRN 108-31-6

CMF C4 H2 O3



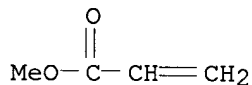
CM 3

CRN 106-74-1  
CMF C7 H12 O3



CM 4

CRN 96-33-3  
CMF C4 H6 O2



L66 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:377058 HCAPLUS  
DN 135:12103  
TI Positive-working photoresist composition containing specific  
acid-sensitive resin and specific solvent for semiconductor device  
fabrication  
IN Sato, Kenichiro; Mizutani, Kazuyoshi  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 49 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-039  
ICS G03F007-004; G03F007-075; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001142211	A2	20010525	JP 1999-319836	19991110
PRAI	JP 1999-319836		19991110		

AB The title compn. contains an acid-sensitive resin solubilized in alkali,  
an actinic ray-sensitive acid generator, and a mixed solvent, wherein the  
resin has repeating unit  $[\text{CH}_2\text{CH}(\text{CH}_2)_n\text{Si}(\text{R}_1)(\text{R}_2)(\text{R}_3)]$  (  $\text{R}_1$ -3 = alkyl,  
haloalkyl, halo, etc.;  $n = 0, 1$ ) and  $[-\text{CH}_2\text{C}(\text{Y})(\text{LCO}_2\text{Q})-]$  (  $\text{Y} = \text{H}, \text{Me},$   
cyano, Cl;  $\text{L} = \text{single bond}, 2\text{-valent connecting group}; \text{Q} = \text{H},$   
acid-sensitive protecting group) or  $[\text{CH}(\text{COX}_2\text{-L}_2\text{-A}_2)\text{-CH}(\text{COX}_2\text{-L}_2\text{-A}_2)]$  (  $\text{X}_1\text{-2}$   
 $= \text{O}, \text{S}, \text{NH}, \text{etc.}; \text{L}_1\text{-2} = \text{single bond}, 2\text{-valent connecting group}; \text{A}_1 = \text{H},$

carboxyl protected with acid-sensitive group; A2 = H, CN, OH, etc.) and wherein the mixed solvent contains an alkyl lactate, another ester, and alkoxyalkylpropionate. The compn., which contains the acid-sensitive resin and the mixed solvent, provides the photoresist of the improved edge roughness.

ST pos photoresist compn acid resin solvent semiconductor device fabrication  
IT Positive photoresists

Semiconductor device fabrication

(pos.-working photoresist compn. contg. specific acid-sensitive resin and specific solvent for semiconductor device fabrication)

IT 314295-77-7P 335430-18-7P, Trimethylallylsilane-maleic anhydride-acrylonitrile copolymer, tert-butyl methyl ester 336609-31-5P, Trimethylallylsilane-maleic anhydride-tert-butyl acrylate copolymer

**340829-95-0P 340829-96-1P 340960-57-8P 340960-59-0P**

340960-61-4P 340960-62-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. specific acid-sensitive resin and specific solvent for semiconductor device fabrication)

IT 97-64-3, Ethyl lactate 123-86-4, Butyl acetate 14272-48-1, 2-Ethoxyethyl propionate

RL: MSC (Miscellaneous)

(solvent in pos.-working photoresist compn.)

IT **340829-95-0P 340960-59-0P**

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. specific acid-sensitive resin and specific solvent for semiconductor device fabrication)

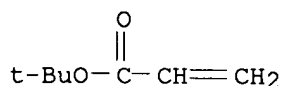
RN 340829-95-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenyltrimethylsilane, 2,5-furandione and methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 1663-39-4

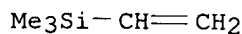
CMF C7 H12 O2



CM 2

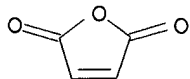
CRN 754-05-2

CMF C5 H12 Si



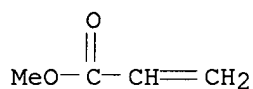
CM 3

CRN 108-31-6  
CMF C4 H2 O3



CM 4

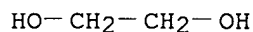
CRN 96-33-3  
CMF C4 H6 O2



RN 340960-59-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with ethenyltrimethylsilane and 2,5-furandione, 2-hydroxyethyl methyl ester (9CI) (CA INDEX NAME)

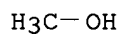
CM 1

CRN 107-21-1  
CMF C2 H6 O2



CM 2

CRN 67-56-1  
CMF C H4 O

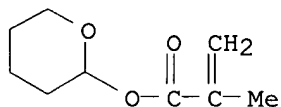


CM 3

CRN 340960-58-9  
CMF (C9 H14 O3 . C5 H12 Si . C4 H2 O3)x  
CCI PMS

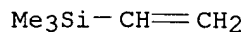
CM 4

CRN 52858-59-0  
CMF C9 H14 O3



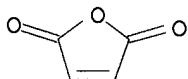
CM 5

CRN 754-05-2  
CMF C5 H12 Si



CM 6

CRN 108-31-6  
CMF C4 H2 O3



L66 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:377057 HCAPLUS  
DN 135:12102  
TI Positive-working photoresist composition containing specific  
acid-sensitive resin and specific solvent for semiconductor device  
fabrication  
IN Sato, Kenichiro; Mizutani, Kazuyoshi  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 47 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-039  
ICS G03F007-004; G03F007-075; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 76  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001142210	A2	20010525	JP 1999-319835	19991110
PRAI	JP 1999-319835		19991110		

AB The title compn. contains an acid-sensitive resin solubilized in alkali,  
an actinic ray-sensitive acid generator, and a solvent contg. heptanone,  
wherein the resin has repeating unit [CH<sub>2</sub>CH(CH<sub>2</sub>)<sub>n</sub>-Si(R<sub>1</sub>)(R<sub>2</sub>)(R<sub>3</sub>)] ( R<sub>1</sub>-3 =  
alkyl, haloalkyl, halo, etc.; n = 0, 1) and [-CH<sub>2</sub>C(Y)(LCO<sub>2</sub>Q)-] ( Y = H,  
Me, cyano, Cl; L = single bond, 2-valent connecting group; Q = H,  
acid-sensitive protecting group) or [CH(COX<sub>2</sub>-L<sub>2</sub>-A<sub>2</sub>)-CH(COX<sub>2</sub>-L<sub>2</sub>-A<sub>2</sub>)] ( X<sub>1</sub>-2

= O, S, NH, etc.; L1-2 = single bond, 2-valent connecting group; A1 = H, carboxyl protected with acid-sensitive group; A2 = H, CN, OH, etc.). The compn., which contains the acid-sensitive resin and the solvent, provides the photoresist of the improved edge roughness.

ST pos photoresist compn acid resin solvent semiconductor device fabrication  
IT Lithography

Positive photoresists

Semiconductor device fabrication

(pos.-working photoresist compn. contg. specific acid-sensitive resin and specific solvent for semiconductor device fabrication)

IT 314295-77-7P 335430-18-7P 336609-31-5P **340829-95-0P**  
340829-96-1P 340960-57-8P **340960-59-0P** 340960-61-4P  
340960-62-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. specific acid-sensitive resin and specific solvent for semiconductor device fabrication)

IT 543-49-7, 2-Heptanol

RL: MSC (Miscellaneous)

(solvent in pos.-working photoresist compn.)

IT **340829-95-0P 340960-59-0P**

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** compn. contg. specific acid-sensitive resin and specific solvent for semiconductor device fabrication)

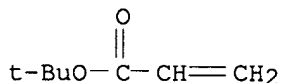
RN 340829-95-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenyltrimethylsilane, 2,5-furandione and methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 1663-39-4

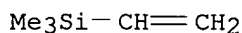
CMF C7 H12 O2



CM 2

CRN 754-05-2

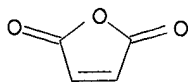
CMF C5 H12 Si



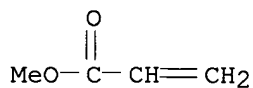
CM 3

CRN 108-31-6

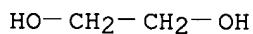
CMF C4 H2 O3



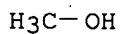
CM 4

CRN 96-33-3  
CMF C4 H6 O2RN 340960-59-0 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, tetrahydro-2H-pyran-2-yl ester, polymer with  
ethenyltrimethylsilane and 2,5-furandione, 2-hydroxyethyl methyl ester  
(9CI) (CA INDEX NAME)

CM 1

CRN 107-21-1  
CMF C2 H6 O2

CM 2

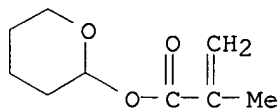
CRN 67-56-1  
CMF C H4 O

CM 3

CRN 340960-58-9  
CMF (C9 H14 O3 . C5 H12 Si . C4 H2 O3)x  
CCI PMS

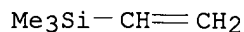
CM 4

CRN 52858-59-0  
CMF C9 H14 O3



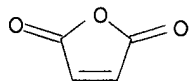
CM 5

CRN 754-05-2  
CMF C5 H12 Si



CM 6

CRN 108-31-6  
CMF C4 H2 O3



L66 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:319605 HCAPLUS  
DN 134:334291  
TI Positive-working photoresist composition  
IN Sato, Kenichiro; Mizutani, Kazuyoshi; Yasunami, Shoichiro  
PA Fuji Photo Film Co., Ltd., Japan  
SO Eur. Pat. Appl., 80 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM G03F007-075  
ICS G03F007-004  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 35, 76  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1096319	A1	20010502	EP 2000-123359	20001030
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001194794	A2	20010719	JP 2000-328968	20001027
	JP 2001201857	A2	20010727	JP 2000-329053	20001027
	US 6589705	B1	20030708	US 2000-698190	20001030
PRAI	JP 1999-309587	A	19991029		
	JP 1999-319837	A	19991110		
AB	The invention relates to a pos.-working photoresist compn. for use in the prodn. of semiconductor integrated circuit element, mask for the prodn. of				



- integrated circuit, printed wiring board, liq. crystal panel, etc. The photoresist compn. comprises (a) a resin comprising the specific repeating structural units which resin increases in its soly. in an alk. developer when acted upon by an acid, (b') an onium salt compd. which generates an acid when irradiated with active ray or radiation and (c) .gtoreq.1 of F-based and/or Si-based surface active agent and nonionic surface active agent or a pos.-working photoresist compn. comprises (a) a resin comprising the specific repeating structural units which resin increases in its soly. in an alk. developer when acted upon by an acid, (b) a compd. which generates an acid when irradiated with active ray or radiation, and (d) a mixed solvent contg. .gtoreq.1 propylene glycol monoalkyl ether carboxylate and .gtoreq.1 of solvents selected from the group consisting of propylene glycol monoalkyl ether, alkyl lactate and alkoxyalkyl propionate and solvents selected from the group consisting of .gamma.-butyrolactone, ethylene carbonate and propylene carbonate.
- ST pos working photoresist maleic anhydride polymer photoacid generator surfactant; iodonium sulfonium fluoride silane solvent UV photoresist integrated circuit
- IT Polysiloxanes, uses  
 RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)  
 (KP 341; surfactant for photoresist compn. used in manuf. of semiconductor integrated circuit element)
- IT Positive photoresists  
 Surfactants  
 (photoresist compn. used in manuf. of semiconductor integrated circuit element)
- IT Fluoropolymers, uses  
 Onium compounds  
 Polymers, uses  
 RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)  
 (photoresist compn. used in manuf. of semiconductor integrated circuit element)
- IT 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-Dimethylaminopyridine  
 RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)  
 (org. base for photoresist compn. used in manuf. of semiconductor integrated circuit element)
- IT 336612-42-1, FHi 028D  
 RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)  
 (photoresist; synthesis of resin having high soly. in alk. developer for photoresist compn. used in manuf. of semiconductor integrated circuit element)
- IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 97-64-3, Ethyl lactate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, uses 1320-67-8, Propylene glycol monomethyl ether 14272-48-1 84540-57-8, Propylene glycol monomethyl ether acetate 98516-33-7, Propylene glycol monomethyl ether propionate  
 RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)  
 (solvent for photoresist compn. used in manuf. of semiconductor integrated circuit element)
- IT 9016-45-9, Polyethylene glycol nonylphenyl ether 137462-24-9, MEGAFAC F 176 216679-67-3, MEGAFAC R 08  
 RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)

(surfactant for photoresist compn. used in manuf. of semiconductor integrated circuit element)

IT 213740-80-8P 220122-68-9P 258341-96-7P 258341-97-8P 258341-99-0P  
279218-73-4P 279218-74-5P 336609-08-6P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(synthesis of photoacid generator for pos.-working photoresist compn. used in manuf. of semiconductor integrated circuit element)

IT 336609-09-7P 336609-10-0P 336609-12-2P 336609-14-4P 336609-15-5P  
336609-16-6P **336609-17-7P** 336609-18-8P 336609-20-2P  
336609-21-3P 336609-23-5P 336609-24-6P 336609-25-7P 336609-26-8P  
336609-27-9P **336609-28-0P** 336609-29-1P 336609-30-4P  
336609-31-5P, Maleic anhydride-tert-butyl acrylate-allyltrimethylsilane copolymer

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
(synthesis of resin having high soly. in alk. developer for **photoresist** compn. used in manuf. of semiconductor integrated circuit element)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Crivello, J; US 5346803 A 1994 HCAPLUS
- (2) Crivello, J; JOURNAL OF POLYMER SCIENCE, PART A: POLYMER CHEMISTRY 1995, V33(3), P513 HCAPLUS
- (3) Fuiji Photo Film Co Ltd; EP 0952489 A 1999 HCAPLUS
- (4) Olin Microelectronic Chemical Inc; WO 9942903 A 1999 HCAPLUS
- (5) Siemens Aktiengesellschaft; EP 0919867 A 1999 HCAPLUS

IT **336609-17-7P 336609-28-0P**

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
(synthesis of resin having high soly. in alk. developer for **photoresist** compn. used in manuf. of semiconductor integrated circuit element)

RN 336609-17-7 HCAPLUS

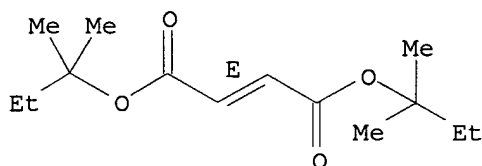
CN 2-Butenedioic acid (2E)-, bis(1,1-dimethylpropyl) ester, polymer with ethenyltrimethylsilane, 2,5-furandione and methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 100829-27-4

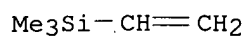
CMF C14 H24 O4

Double bond geometry as shown.



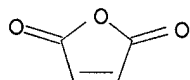
CM 2

CRN 754-05-2  
CMF C5 H12 Si



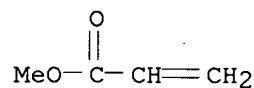
CM 3

CRN 108-31-6  
CMF C4 H2 O3



CM 4

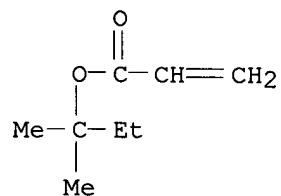
CRN 96-33-3  
CMF C4 H6 O2



RN 336609-28-0 HCAPLUS  
CN 2-Propenoic acid, 1,1-dimethylpropyl ester, polymer with  
ethenyltrimethylsilane, 2,5-furandione and methyl 2-propenoate (9CI) (CA  
INDEX NAME)

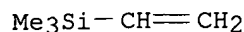
CM 1

CRN 7383-26-8  
CMF C8 H14 O2



CM 2

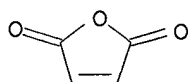
CRN 754-05-2  
CMF C5 H12 Si



CM 3

CRN 108-31-6

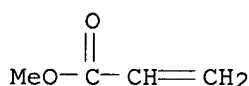
CMF C4 H2 O3



CM 4

CRN 96-33-3

CMF C4 H6 O2



L66 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2001:299130 HCAPLUS  
 DN 134:318692  
 TI Positive photoresist compositions providing line patterns with excellent edge sharpness  
 IN Mizutani, Kazuyoshi  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 35 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-039  
 ICS G03F007-004; G03F007-075; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001117233	A2	20010427	JP 1999-298605	19991020
PRAI	JP 1999-298605		19991020		

AB The compns. comprise (A) acid-decomposable polymers comprising (i)  $[\text{CH}_2\text{C}[(\text{CH}_2)_n\text{SiR}_1\text{R}_2\text{R}_3]\text{H}]$  [ $\text{R}_1\text{-3} = (\text{halo})\text{alkyl}, \text{halo}, \text{alkoxy}, \text{trialkylsilyl(oxy)}; n = 0, 1]$  and (ii)  $[\text{CH}_2\text{CY}(\text{LCO}_2\text{Q})]$  [ $\text{Y} = \text{H}, \text{Me}, \text{cyano}, \text{Cl}; \text{L} = \text{single bond}, \text{bivalent linkage}; \text{Q} = \text{H}, \text{acid-decomposable groups}]$  and/or  $[\text{CH}(\text{COX}_2\text{L}_2\text{A}_2)\text{CH}(\text{COX}_1\text{L}_1\text{A}_1)]$  [ $\text{X}_1, \text{X}_2 = \text{O}, \text{S}, \text{NH}, \text{NHSO}_2; \text{L}_1, \text{L}_2 = \text{single bond}, \text{bivalent linkage}; \text{A}_1 = \text{Q}, \text{CO}_2\text{Q}; \text{A}_2 = \text{H}, \text{cyano}, \text{OH}, \text{CO}_2\text{H}, \text{CO}_2\text{R}', \text{CONHR}'', \text{alkyl(oxy)}, \text{cyclic hydrocarbyl}, \text{CO}_2\text{Q} (\text{R}', \text{R}'' = \text{alkyl})]$ , (B) photoacid generators, (C) org. solvents, (D) basic org. compds., (E) F- and/or Si-bearing surfactants and/or nonionic surfactants. The photoacid

- generators may generate org. sulfonic acids upon irradiation.
- ST acid decomposable acrylic polymer positive photoresist; methylallylsilane maleic anhydride polymer photoresist sensitivity; edge sharpness positive photoresist acid decomposable; sulfonic acid forming photoacid generator photoresist
- IT Polysiloxanes, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (KP 341, surfactants; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Diazo compounds  
 RL: CAT (Catalyst use); USES (Uses)  
 (di- or ketosulfones, photoacid generators; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Sulfones  
 RL: CAT (Catalyst use); USES (Uses)  
 (disulfones, photoacid generators; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Sulfonates  
 RL: CAT (Catalyst use); USES (Uses)  
 (iminosulfonates, photoacid generators; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Onium compounds  
 RL: CAT (Catalyst use); USES (Uses)  
 (iodonium, sulfonates, photoacid generators; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Surfactants  
 (nonionic; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Positive photoresists  
 Surfactants  
 (positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Sulfonic acids, uses  
 RL: CAT (Catalyst use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)  
 (positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT Sulfonium compounds  
 RL: CAT (Catalyst use); USES (Uses)  
 (sulfonates, photoacid generators; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT 57835-99-1, Triphenylsulfonium hexafluorophosphate 153698-46-5  
 197447-16-8 287925-54-6, Bis(p-tert-amylphenyl)iodonium tosylate  
 RL: CAT (Catalyst use); USES (Uses)  
 (photoacid generators; positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-Dimethylaminopyridine  
 6674-22-2, DBU  
 RL: CAT (Catalyst use); USES (Uses)  
 (positive photoresists containing organosilyl-bearing polymers and showing good edge sharpness of line patterns)
- IT 335427-33-3P **335427-34-4P** 335427-35-5P 335430-18-7P  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material)

use); PREP (Preparation); USES (Uses)

(pos. **photoresists** contg. organosilyl-bearing polymers and showing good edge sharpness of line **patterns**)

IT 9016-45-9, Polyethylene glycol nonyl phenyl ether 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08

RL: MOA (Modifier or additive use); USES (Uses)

(surfactants; pos. photoresists contg. organosilyl-bearing polymers and showing good edge sharpness of line patterns)

IT **335427-34-4P**

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos. **photoresists** contg. organosilyl-bearing polymers and showing good edge sharpness of line **patterns**)

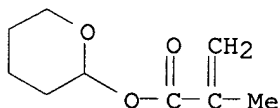
RN 335427-34-4 HCAPLUS

CN 2-Butenedioic acid (2Z)-, 2-hydroxyethyl methyl ester, polymer with ethenyltrimethylsilane and tetrahydro-2H-pyran-2-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 52858-59-0

CMF C9 H14 O3

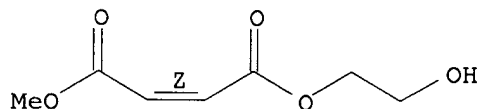


CM 2

CRN 45023-72-1

CMF C7 H10 O5

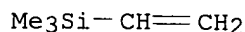
Double bond geometry as shown.



CM 3

CRN 754-05-2

CMF C5 H12 Si



L66 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2000:803821 HCAPLUS

DN 133:336654

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

TI Organosilyl group-containing fluoropolymers, their manufacture, and  
varnishes and coatings using them  
IN Ohbayashi, Nobuo; Kimura, Yukiyo; Katayama, Mitsuhiro; Warita, Kiyoshiro  
PA Kanto Denka Kogyo K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F214-18

ICS C08F002-06; C08F002-16; C08F216-16; C08F220-10; C08F230-08;  
C09D127-12; C09D143-04

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000313725	A2	20001114	JP 2000-49052	20000225
PRAI	JP 1999-57335	A	19990304		

AB Title fluoropolymers contain 15-85 mol% fluoroolefin units and 0.001-50 mol% units of .gtoreq.1 org. Si compds. selected from CH2:CHSiR1R2R3 (R1-R3 = H, Me, Et, Bu, Ph, CF3, C2H4CF3, CMe3, OSiMe3), CH2:CR4R5(CH2)nSiMe2(OSiMe2)mOSiMe3, CH2:CR4CO2(CH2)nSiMe2(OSiMe2)mOSiMe2R6 (R4 = H, Me; R5 = ester, ether, O; R6 = H, C1-6 alkyl; n = 0-10; m = 0-160), and CH2:CR7CO2(CH2)pSiR8R9R10 (R7 = H, Me; R8-R10 = H, Me, Et, Bu, OSiMe3; p = 0-10). The fluoropolymers are manufd. by soln. polymn. in .gtoreq.1 solvents selected from Et acetate, Bu acetate, xylene, toluene, MEK or in aq. media of pH .gtoreq.4. Thus, vinylidene fluoride, tetrafluoroethylene, Et vinyl ether, hydroxybutyl vinyl ether, and vinyl-diethylmethylsilane were polymd. in Bu acetate in the presence of tert-Bu peroxy-pivalate to give a copolymer, which was mixed with Coronate HX, applied on a steel (JIS G 3141) sheet, and kept at room temp. for 1 wk to give a test piece showing pencil hardness 2H and high acid, alkali, oil, and water resistance.

ST silyl fluoropolymer coating acid resistance; alkali resistance coating organosilyl fluoropolymer; oil resistance coating organosilyl fluoropolymer; water resistance coating organosilyl fluoropolymer; varnish fluoropolymer polysiloxane water resistance

IT Coating materials

(acid-resistant; manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT Coating materials

(alkali-resistant; manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT Polysiloxanes, uses

Polysiloxanes, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(fluorine-contg., graft; manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT Varnishes

(manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT Fluoropolymers, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT Coating materials

(oil-resistant; manuf. of organosilyl-contg. fluoropolymers for

varnishes and coatings with high chem. and water resistance)

IT Fluoropolymers, uses  
Fluoropolymers, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polysiloxane-, graft; manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT Coating materials  
(water-resistant; manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT **304691-05-2P** 304691-06-3P 304691-07-4P **304691-08-5P**  
304691-09-6P **304691-10-9P** 304691-11-0P 304691-12-1P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water **resistance**)

IT **304690-97-9P** 304690-98-0P 304690-99-1P **304691-00-7P**  
304691-01-8P **304691-02-9P** 304691-03-0P 304691-04-1P  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water **resistance**)

IT 78-93-3, Methyl ethyl ketone, uses 108-88-3, Toluene, uses 123-86-4, Butyl acetate 141-78-6, Acetic acid ethyl ester, uses 1330-20-7, Xylene, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(solvents for soln. polymn.; manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water resistance)

IT **304691-05-2P 304691-08-5P 304691-10-9P**  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water **resistance**)

RN 304691-05-2 HCAPLUS

CN Butanol, (ethenyloxy)-, polymer with Coronate HX, 1,1-difluoroethene, ethenyldiethylmethysilane, ethoxyethene and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

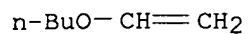
CRN 144245-98-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 42978-84-7  
CMF C6 H12 O2  
CCI IDS



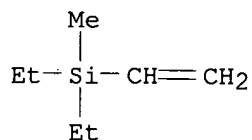


D1-OH

CM 3

CRN 18292-29-0

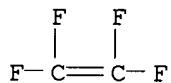
CMF C7 H16 Si



CM 4

CRN 116-14-3

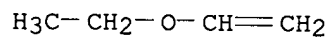
CMF C2 F4



CM 5

CRN 109-92-2

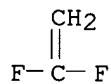
CMF C4 H8 O



CM 6

CRN 75-38-7

CMF C2 H2 F2



RN 304691-08-5 HCAPLUS

CN Butanol, (ethenyloxy)-, polymer with Coronate HX, 1,1-difluoroethene,

ethenyldiethylmethylsilane, 1-(ethenyloxy)butane and tetrafluoroethene  
(9CI) (CA INDEX NAME)

CM 1

CRN 144245-98-7

CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 42978-84-7

CMF C6 H12 O2

CCI IDS

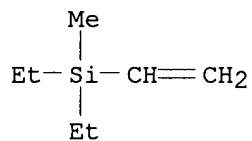
n-BuO-CH=CH<sub>2</sub>

D1-OH

CM 3

CRN 18292-29-0

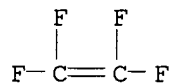
CMF C7 H16 Si



CM 4

CRN 116-14-3

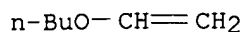
CMF C2 F4



CM 5

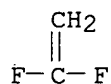
CRN 111-34-2

CMF C6 H12 O



CM 6

CRN 75-38-7  
CMF C2 H2 F2



RN 304691-10-9 HCAPLUS  
CN Silane, ethenyldiethylmethyl-, polymer with Coronate HX,  
1,1-difluoroethene, 1-(ethenyloxy)butane, [(2-propenyloxy)methyl]oxirane  
and tetrafluoroethene (9CI) (CA INDEX NAME)

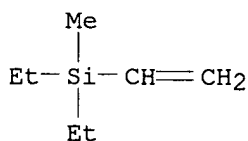
CM 1

CRN 144245-98-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

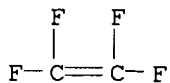
CM 2

CRN 18292-29-0  
CMF C7 H16 Si



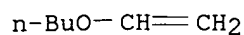
CM 3

CRN 116-14-3  
CMF C2 F4



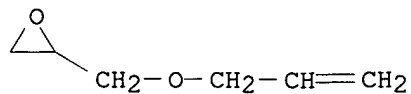
CM 4

CRN 111-34-2  
CMF C6 H12 O



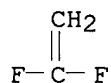
CM 5

CRN 106-92-3  
CMF C6 H10 O2



CM 6

CRN 75-38-7  
CMF C2 H2 F2



IT 304690-97-9P 304691-00-7P 304691-02-9P

RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

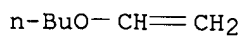
(manuf. of organosilyl-contg. fluoropolymers for varnishes and coatings with high chem. and water **resistance**)

RN 304690-97-9 HCAPLUS

CN Butanol, (ethenyloxy)-, polymer with 1,1-difluoroethene, ethenyldiethylmethylsilane, ethoxyethene and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 42978-84-7  
CMF C6 H12 O2  
CCI IDS

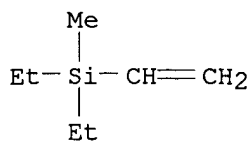


D1-OH

CM 2

CRN 18292-29-0

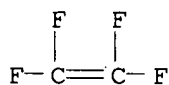
CMF C7 H16 Si



CM 3

CRN 116-14-3

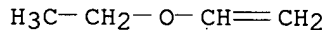
CMF C2 F4



CM 4

CRN 109-92-2

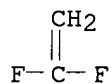
CMF C4 H8 O



CM 5

CRN 75-38-7

CMF C2 H2 F2



RN 304691-00-7 HCAPLUS

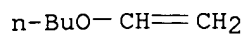
CN Butanol, (ethenyloxy)-, polymer with 1,1-difluoroethene, ethenyldiethylmethylsilane, 1-(ethenyloxy)butane and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 42978-84-7

CMF C6 H12 O2

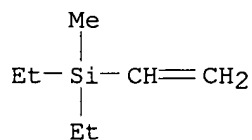
CCI IDS



D1-OH

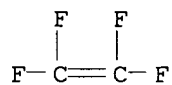
CM 2

CRN 18292-29-0  
CMF C7 H16 Si



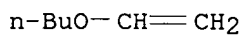
CM 3

CRN 116-14-3  
CMF C2 F4



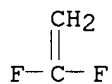
CM 4

CRN 111-34-2  
CMF C6 H12 O



CM 5

CRN 75-38-7  
CMF C2 H2 F2



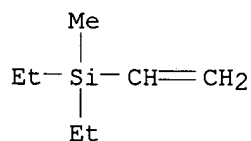
RN 304691-02-9 HCAPLUS  
CN Silane, ethenyldiethylmethyl-, polymer with 1,1-difluoroethene,

1-(ethenyloxy)butane, [(2-propenyloxy)methyl]oxirane and tetrafluoroethene  
(9CI) (CA INDEX NAME)

CM 1

CRN 18292-29-0

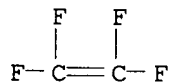
CMF C7 H16 Si



CM 2

CRN 116-14-3

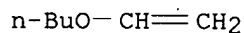
CMF C2 F4



CM 3

CRN 111-34-2

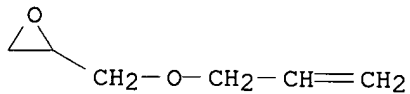
CMF C6 H12 O



CM 4

CRN 106-92-3

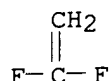
CMF C6 H10 O2



CM 5

CRN 75-38-7

CMF C2 H2 F2



L66 ANSWER 11 OF 21. HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1999:162116 HCAPLUS  
 DN 130:252841  
 TI Polysilanes for resist etching mask and formation of resist pattern  
 IN Nakano, Yoshihiko; Kani, Rikako; Hayase, Shuji; Sato, Yasuhiko; Miyoshi, Yasuo; Gokawachi, Toru; Yoshikawa, Sawako; Matsuyama, Hideto; Ohnishi, Kiyonobu; Hiraoka, Toshiro; Narita, Masaki  
 PA Toshiba Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 184 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G077-60  
 ICS G03F007-075  
 CC 35-7 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 74, 76  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11060735	A2	19990305	JP 1997-336655	19971121
	US 6025117	A	20000215	US 1997-986517	19971208
PRAI	JP 1996-328587		19961209		
	JP 1997-624		19970107		
	JP 1997-155553		19970612		
	JP 1997-336655		19971121		
AB	Various polysilanes are synthesized and tested for etching rate under various conditions. The polysilanes are used as etching masks for the formation of resist pattern on a substrate, such as silicon wafer. The process for forming a resist pattern is also claimed.				
ST	polysilane etching mask resist pattern formation				
IT	Epoxy resins, reactions Phenolic resins, reactions Polysiloxanes, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (crosslinking agent; polysilanes for resist etching mask for formation of resist pattern)				
IT	Etching Etching masks Resists Semiconductor devices (polysilanes for resist etching mask for formation of resist pattern)				
IT	Polysilanes RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polysilanes for resist etching mask for formation of resist pattern)				
IT	Dendritic polymers RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polysilanes; polysilanes for resist etching mask for formation of resist pattern)				
IT	71-43-2D, Benzene, polymethylenephenylenes, hydroxy derivs., epoxy-contg.,				



reactions 91-20-3D, Naphthalene, polymethylenenaphthalenes, hydroxy derivs., amino derivs., epoxy derivs., reactions 120-12-7D, Anthracene, polymethylenanthracenes, hydroxy derivs., amino derivs., epoxy derivs., reactions 694-59-7, Pyridine N-oxide 919-30-2, .gamma.-Aminopropyltriethoxysilane 2386-87-0 9003-35-4, Formaldehyde-phenol copolymer 9005-12-3, Methylphenylsilanediol homopolymer, sru 9016-00-6, Dimethylsilanediol homopolymer, sru 9016-83-5, Cresol-formaldehyde copolymer 18042-57-4 25087-26-7, Polymethacrylic acid 29226-39-9, Diphenylsilanediol homopolymer 31230-04-3, Methylphenylsilanediol homopolymer 31900-57-9, Dimethylsilanediol homopolymer 32129-24-1, Diphenylsilanediol homopolymer, sru 57912-91-1 164652-59-9 **221379-58-4 221379-59-5** 221379-60-8 221379-61-9 221379-62-0 221379-63-1 221548-16-9 221548-17-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(crosslinking agent; polysilanes for **resist** etching mask for formation of **resist pattern**)

IT 10026-04-7, Silicon tetrachloride

RL: RCT (Reactant); RACT (Reactant or reagent)

(for prepn. of silicon nanocluster; prepn. of polysilanes for resist etching mask for formation of resist pattern)

IT 75-77-4DP, Trimethylchlorosilane, reaction products with polysilanes 98387-81-6DP, Dichlorodiphenylsilane-dichloromethylphenylsilane copolymer, reaction products with trimethylchlorosilane 188610-82-4P 209416-72-8P 212334-44-6DP, reaction products with trimethylchlorosilane 221378-62-7DP, reaction products with trimethylchlorosilane 221378-63-8DP, reaction products with trimethylchlorosilane 221378-65-0DP, reaction products with trimethylchlorosilane 221378-70-7P 221378-72-9P 221378-74-1P 221378-75-2P 221378-76-3DP, reaction products with trimethylchlorosilane 221378-77-4P 221378-78-5DP, reaction products with trimethylchlorosilane 221378-79-6P 221378-80-9DP, reaction products with trimethylchlorosilane 221379-00-6DP, Dichlorodiphenylsilane-1,4-bis(chloromethylphenylsilyl)benzene copolymer, reaction products with trimethylchlorosilane 221379-12-0P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polysilanes for resist etching mask for formation of resist pattern)

IT 1217-45-4, 9,10-Anthracenedicarbonitrile 1518-16-7, TCNQ  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(polysilanes for resist etching mask for formation of resist pattern)

IT 935-14-8D, 1,4-Diethynylbenzene, polymers with polysilanes 1631-84-1D, Dichlorophenylsilane, polymers with diethynylbenzene derivs. 29468-75-5 31324-77-3, Dichloromethylphenylsilane homopolymer 41087-22-3, Phenyltrichlorosilane homopolymer 76188-55-1, Dichloromethylphenylsilane homopolymer, sru 95584-36-4, Dichlorophenylsilane homopolymer, sru 98387-81-6 99936-07-9, Dichlorophenylsilane homopolymer 99936-08-0, Dichloromethylsilane homopolymer 99936-09-1 105064-43-5, Poly(methylsilylene) 113219-09-3, Cyclohexyltrichlorosilane homopolymer 127028-87-9 135266-27-2 143558-05-8, Dichlorodiphenylsilane-dichlorophenylsilane copolymer 162411-15-6 173341-63-4 186906-67-2, Poly(2-naphthalenylsilylene) 192663-98-2 192726-24-2, Poly([(trifluoromethyl)phenyl]silylene) 212334-27-5, Dichloro-1-naphthylsilane homopolymer 212334-29-7, Poly(1-naphthalenylsilylene) 212334-42-4, Dichlorodiphenylsilane-1,2-bis(dichlorophenylsilyl)ethane copolymer 213206-64-5 221378-61-6 221378-64-9 221378-66-1 221378-67-2 221378-68-3 221378-81-0 221378-82-1 221378-83-2 221378-84-3 221378-85-4 221378-86-5 221378-87-6 221378-88-7 221378-89-8 221378-90-1 221378-91-2

221378-92-3 221378-93-4 221378-94-5 221378-95-6,  
Dichlorodiphenylsilane-dichloroethylphenylsilane copolymer 221378-96-7  
221378-97-8 221378-98-9 221378-99-0 221379-00-6 221379-02-8  
221379-03-9 221379-04-0 221379-06-2 221379-07-3 221379-08-4  
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221379-15-3 221379-16-4 221379-17-5 221379-18-6 221379-19-7  
221379-20-0 221379-21-1 221379-22-2 221379-23-3 221379-25-5  
221379-26-6 221379-27-7 221379-28-8 221379-29-9 221379-30-2  
221379-31-3 221379-32-4 221379-35-7 221379-38-0 221379-40-4  
221379-43-7 221379-45-9 221379-47-1 221379-49-3 221379-50-6  
221379-51-7 221379-52-8 221379-54-0 221379-56-2 221379-65-3  
221379-66-4, Poly(2-anthracenylsilylene) 221379-67-5 221379-68-6  
221379-69-7 221379-70-0 221379-71-1, Poly(methyl-1-  
naphthalenylsilylene) 221548-14-7 221548-15-8 221548-50-1  
221633-63-2 221633-64-3 221633-66-5 221633-68-7 221633-70-1  
221633-72-3 221633-74-5 221633-75-6 221633-77-8 221633-79-0  
221633-81-4 221633-83-6 221633-85-8 221633-87-0 221658-75-9  
RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)

(polysilanes for resist etching mask for formation of resist pattern)

IT 153700-08-4, APEX E 183023-97-4, TDUR N908 202218-68-6, TDUR P007

RL: TEM (Technical or engineered material use); USES (Uses)

(polysilanes for resist etching mask for formation of resist pattern)

IT 15411-17-3P 209416-71-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(prepn. of polysilanes for resist etching mask for formation of resist  
pattern)

IT 124-70-9 754-75-6 1066-35-9, Dimethylchlorosilane 79343-32-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of polysilanes for resist etching mask for formation of resist  
pattern)

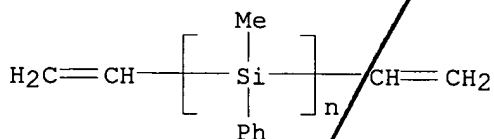
IT 221379-58-4 221379-59-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(crosslinking agent; polysilanes for **resist** etching mask for  
formation of **resist pattern**)

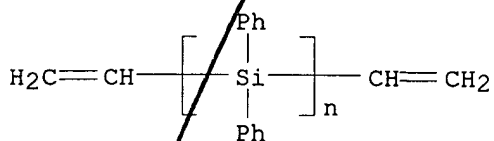
RN 221379-58-4 HCAPLUS

CN Poly(methylphenylsilylene), .alpha.,.omega.-diethenyl- (9CI) (CA INDEX  
NAME)



RN 221379-59-5 HCAPLUS

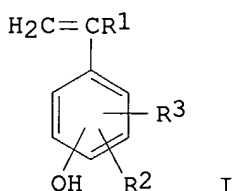
CN Poly(diphenylsilylene), .alpha.,.omega.-diethenyl- (9CI) (CA INDEX NAME)



L66 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1991:91964 HCAPLUS  
 DN 114:91964  
 TI Photoresists for negative pattern formation  
 IN Oie, Masayuki; Kamiya, Shigemitsu  
 PA Nippon Zeon Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03C001-71  
 ICS G03F007-08  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 76, 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01126641	A2	19890518	JP 1987-285877	19871112
PRAI	JP 1987-285877		19871112		
GI					



AB A photoresist compn. for patterning contains a copolymer of hydroxystyrene I (R1 = H, alkyl; R2-3 = H, alkyl, aryl, aralkyl, alkenyl, halo) with CH2:CHSiR4R5R6 (R4-6 = alkyl, aryl, alkylsiloxo, alkoxy, aralkyl, alkenyl) and a photocrosslinking agent. The photoresist compn. is used for an upper layer for bilayered resist patterning on a substrate having steps, giving a precise neg. pattern for fabrication of semiconductor devices, magnetic bubble memory devices, integrated circuits, etc. A p-hydroxystyrene-vinyltrimethylsilane copolymer was mixed with 2,6-bis(4'-adizobenzal)cyclohexanone in cyclohexanone, the resulting compn. was applied a Si wafer bearing an AZ 1350 J layer (pos. photoresist) by spin coating, pattern-wise exposed, and developed to give a neg. pattern, and the AZ 1350 J resist layer was dry-etched using the obtained upper resist pattern as a mask to give a highly precise pattern.

ST photoresist hydroxystyrene silane copolymer; semiconductor device patterning bilayered photoresist; photocrosslinking agent photoresist patterning

IT Semiconductor devices  
 (bilayer hydroxystyrene-silane copolymer and photocrosslinking agent for precise patterning for)

IT Memory devices  
 (magnetic bubble, bilayer hydroxystyrene-silane copolymer and photocrosslinking agent for precise patterning for)

IT Resists

(photo-, neg.-working, bilayer, hydroxystyrene-silane copolymer and photocrosslinking agent in, for precise patterning)

IT 5284-79-7 14128-15-5, 4,4'-Diazidochalcone 20237-98-3,  
2,6-Bis(4'-azidobenzal)cyclohexanone  
RL: USES (Uses)  
(photoresist compn. contg. hydroxystyrene-silane copolymer and, for fine patterning)

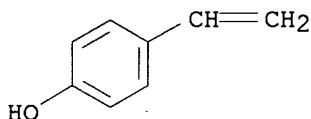
IT 111634-05-0 124911-84-8 124911-85-9  
124911-86-0  
RL: USES (Uses)  
(photoresist compn. contg. photocrosslinking agent and, for fine patterning)

IT 111634-05-0 124911-84-8 124911-85-9  
124911-86-0  
RL: USES (Uses)  
(photoresist compn. contg. photocrosslinking agent and, for fine patterning)

RN 111634-05-0 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with ethenyltrimethylsilane (9CI) (CA INDEX NAME)

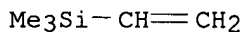
CM 1

CRN 2628-17-3  
CMF C8 H8 O



CM 2

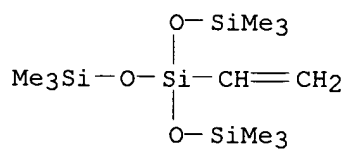
CRN 754-05-2  
CMF C5 H12 Si



RN 124911-84-8 HCAPLUS  
CN Phenol, 4-ethenyl-, polymer with 3-ethenyl-1,1,1,5,5,5-hexamethyl-3-[(trimethylsilyl)oxy]trisiloxane (9CI) (CA INDEX NAME)

CM 1

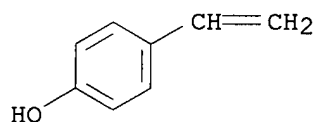
CRN 5356-84-3  
CMF C11 H30 O3 Si4



CM 2

CRN 2628-17-3

CMF C8 H8 O



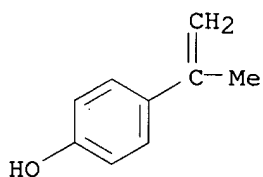
RN 124911-85-9 HCAPLUS

CN Phenol, 4-(1-methylethenyl)-, polymer with ethenyltriethylsilane (9CI)  
(CA INDEX NAME)

CM 1

CRN 4286-23-1

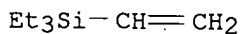
CMF C9 H10 O



CM 2

CRN 1112-54-5

CMF C8 H18 Si



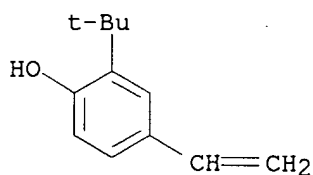
RN 124911-86-0 HCAPLUS

CN Phenol, 2-(1,1-dimethylethyl)-4-ethenyl-, polymer with  
ethenyltrimethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 121912-65-0

CMF C12 H16 O



CM 2

CRN 754-05-2  
CMF C5 H12 Si

Me<sub>3</sub>Si-CH=CH<sub>2</sub>

L66 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1990:414810 HCAPLUS  
DN 113:14810  
TI Heat-resistant photoresist  
IN Wada, Keiichiro; Furukawa, Nobuyuki  
PA Nippon Steel Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08G073-10  
ICS C08F002-48; C08F299-02; C08G071-02; C08G073-10  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01230631	A2	19890914	JP 1988-55958	19880311
PRAI	JP 1988-55958		19880311		
AB	A tetracarboxylic anhydride is reacted with a silylated diamine contg. photosensitive groups at .ltoreq.100.degree. in an org. solvent. The resultant heat-resistant photosensitive polyimide or polyamidoimide is used as a photoresist for relief pattern formation during semiconductor device fabrication.				
ST	photoresist polyimide polyamide silylated; resist pattern polyimide polyamide				
IT	Semiconductor devices (fabrication of, heat-resistant resists for)				
IT	Polyimides, uses and miscellaneous RL: USES (Uses) (photoresists, for heat-resistant pattern formation)				
IT	Resists (photo-, silylated polyimides and polyamidoimides as, for heat-resistant pattern formation)				
IT	127536-86-1	127536-88-3	127536-90-7	127554-77-2	127706-32-5
	RL: USES (Uses) (photoresist compn. using, for heat-resist				

resist pattern formation)

IT 127706-32-5

RL: USES (Uses)

(photoresist compn. using, for heat-resist  
resist pattern formation)

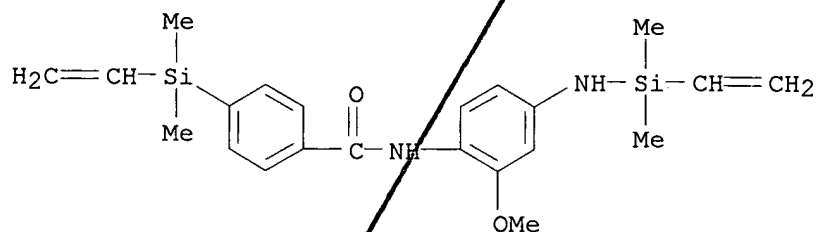
RN 127706-32-5 HCAPLUS

CN Benzamide, 4-(ethenyldimethylsilyl)-N-[4-[(ethenyldimethylsilyl)amino]-2-methoxyphenyl]-, polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone (9CI) (CA INDEX NAME)

CM 1

CRN 127706-31-4

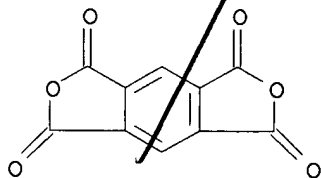
CMF C22 H30 N2 O2 Si2



CM 2

CRN 89-32-7

CMF C10 H2 O6



L66 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1990:207987 HCAPLUS

DN 112:207987

TI Resist materials, and pattern formation using the materials

IN Takechi, Satoshi; Nakamura, Hiroko; Tsurunaga, Yukari

PA Fujitsu Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03C001-71

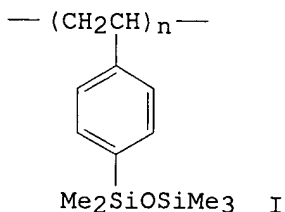
ICS G03C001-00; H01L021-30

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01297644	A2	19891130	JP 1988-129072	19880526
PRAI	JP 1988-129072		19880526		
GI					



AB Resist materials to form a layer on org. leveled layer on resist substrates consist of polymers of or copolymers contg. unit I. The patterning method involves patterning of the upper layer using radiations, and dry etching of the lower layer with the obtained pattern as mask. High sensitivity and resolu. are obtained. Thus, a Si wafer coated with 0.2-.mu.m-thick layer of OFPR 800 (com. resist) and then with a 3000-.ANG.-thick layer of 1:1 p-chlorostyrene-ethenylpentamethyldisiloxane copolymer. This layer was patterned with electron beam and developed with MIBK, and the resist was etched in O plasma for 25 min. Pattern with 0.3-.mu.m line-and space was formed on the lower layer, with the ratio of etching rate of resp. layers .gtoreq.50.

ST resist silyl polystyrene; plasma etching electron resist patterning

IT Resists

(electron-beam, polysilylstyrenes as upper layer of, resistance to plasma etching)

IT **126843-48-9** 126843-49-0

RL: USES (Uses)

(radiation **resists** contg., as upper layer, **resistance** to oxygen plasma, **pattern** formation using)

IT **126843-48-9**

RL: USES (Uses)

(radiation **resists** contg., as upper layer, **resistance** to oxygen plasma, **pattern** formation using)

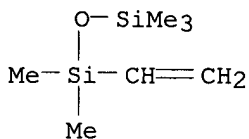
RN 126843-48-9 HCAPLUS

CN Disiloxane, ethenylpentamethyl-, polymer with 1-chloro-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 1438-79-5

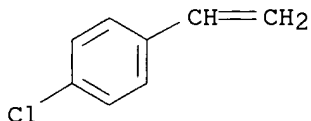
CMF C7 H18 O Si2





CM 2

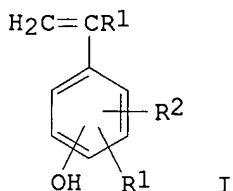
CRN 1073-67-2  
CMF C8 H7 Cl



L66 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1990:66762 HCAPLUS  
DN 112:66762  
TI Photoresists for positive pattern formation  
IN Oie, Masayuki; Konishi, Ichiro; Kamiya, Shigemitsu  
PA Nippon Zeon Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03C001-72  
ICS G03F007-08  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 76, 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01126643	A2	19890518	JP 1987-285876	19871112
PRAI	JP 1987-285876		19871112		
GI					

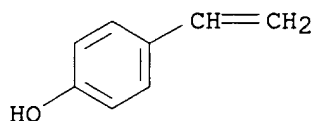


AB A photoresist compn. for patterning contains a copolymer of hydroxystyrene I (R1 = H, alkyl; R2-3 = H, alkyl, aryl, aralkyl, alkenyl, halo) with CH2:CHSiR4R5R6 (R4-6 = alkyl, aryl, alkylsiloxy, alkoxy, aralkyl, alkenyl) and a quinonediazido compd. The photoresist compn. is used for an upper layer for bilayered resist patterning on a substrate having steps, giving a precise neg. pattern for fabrication of semiconductor devices, magnetic bubble memory devices, integrated circuits, etc. A p-hydroxystyrene-vinyltrimethylsilane copolymer was mixed with 2,3,4-trihydroxybenzophenone 1,2-naphthoquinonediazido-5-sulfonate in Et cellosolve acetate, the resulting compn. was applied a Si wafer bearing an AZ 1350 J layer (pos. photoresist) by spin coating, pattern-wise exposed, and developed to give a pos. pattern, and the AZ 1350 J resist layer was dry-etched using the

obtained upper resist pattern as a mask to give a highly precise pattern.  
 ST photoresist hydroxystyrene silane copolymer; semiconductor device  
 patterning bilayered photoresist; quinonediazido compd photoresist  
 patterning  
 IT Semiconductor devices  
 (photoresist compn. contg. hydroxystyrene-silane copolymer and  
 photocrosslinking agent for precise patterning for)  
 IT Electric circuits  
 (integrated, photoresist compn. contg. hydroxystyrene-silane copolymer  
 and photocrosslinking agent for precise patterning for)  
 IT Memory devices  
 (magnetic bubble, photoresist compn. contg. hydroxystyrene-silane  
 copolymer and photocrosslinking agent for precise patterning for)  
 IT Resists  
 (photo-, pos.-working, bilayer, hydroxystyrene-silane copolymer and  
 quinonediazido compd. in, for precise patterning)  
 IT 111634-05-0 124911-84-8 124911-85-9  
 124911-86-0  
 RL: USES (Uses)  
 (photoresist compn. contg. quinonediazido compd. and, for  
 fine patterning)  
 IT 68510-93-0 124760-77-6  
 RL: USES (Uses)  
 (pos.-working photoresist compn. contg. hydroxystyrene-silane copolymer  
 and, for fine patterning)  
 IT 111634-05-0 124911-84-8 124911-85-9  
 124911-86-0  
 RL: USES (Uses)  
 (photoresist compn. contg. quinonediazido compd. and, for  
 fine patterning)  
 RN 111634-05-0 HCAPLUS  
 CN Phenol, 4-ethenyl-, polymer with ethenyltrimethylsilane (9CI) (CA INDEX  
 NAME)

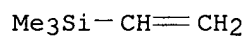
CM 1

CRN 2628-17-3  
 CMF C8 H8 O



CM 2

CRN 754-05-2  
 CMF C5 H12 Si



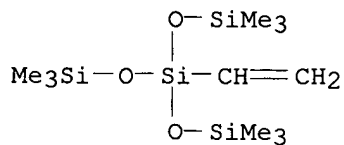
RN 124911-84-8 HCAPLUS  
 CN Phenol, 4-ethenyl-, polymer with 3-ethenyl-1,1,1,5,5,5-hexamethyl-3-

[(trimethylsilyl)oxy]trisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 5356-84-3

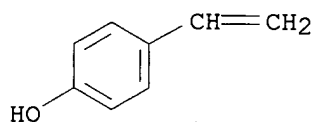
CMF C11 H30 O3 Si4



CM 2

CRN 2628-17-3

CMF C8 H8 O



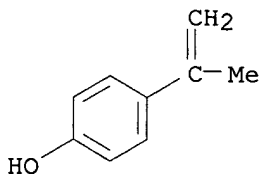
RN 124911-85-9 HCAPLUS

CN Phenol, 4-(1-methylethenyl)-, polymer with ethenyltriethylsilane (9CI)  
(CA INDEX NAME)

CM 1

CRN 4286-23-1

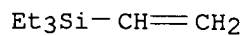
CMF C9 H10 O



CM 2

CRN 1112-54-5

CMF C8 H18 Si



RN 124911-86-0 HCAPLUS

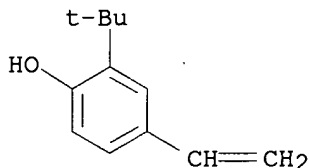
CN Phenol, 2-(1,1-dimethylethyl)-4-ethenyl-, polymer with

ethenyltrimethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 121912-65-0

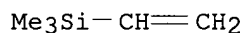
CMF C12 H16 O



CM 2

CRN 754-05-2

CMF C5 H12 Si



L66 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1989:544138 HCAPLUS

DN 111:144138

TI Silyl group-containing ethylene polymers, resist compositions, and patterning processes

IN Saigo, Kazuhide

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F030-08

ICS C08F299-00; G03C001-00; G03C001-71

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

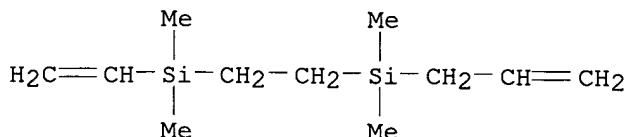
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01101312	A2	19890419	JP 1987-258443	19871015
	JP 06015585	B4	19940302		
PRAI	JP 1987-258443		19871015		

AB Polymers (mol. wt. 3000-1,000,000) contg. repeating units of the formula  $\text{CH}_2\text{CH}[\text{SiMe}_2(\text{CH}_2)_n\text{SiMe}_2\text{CH}_2\text{CH}:\text{CH}_2]$  ( $n \geq 1$ ), resist compns. contg. these polymers and bisazide compds., and 2-layer resist patterning processes which use these resist compns. as the top resist layer are claimed. The polymers give patterns having excellent dry etching resistance and are useful in the fabrication of semiconductors, magnetic bubble memories, etc. Thus, 1,4-dichlorotetramethyldisilylethane was methoxylated, then treated with  $\text{CH}_2:\text{CHCH}_2\text{MgBr}$  followed by  $\text{CH}_2:\text{CHMgBr}$  to give 1-allyl-4-vinyltetramethyldisilylethane, which was polymd. in the

presence of n-BuLi to give a polymer with a wt. av. mol. wt. of 55,000. A soln. of the polymer and 2,6-di(4-azidobenzal)-4-methylcyclohexanone in xylene was spin-coated on a MP 1300 (resist)-coated Si substrate, irradiated by UV through a mask, developed, and etched to form a submicron pattern.

ST silylethylene polymer photoresist; diazide sensitizer polysilylethylene photoresist; allylvinyltetramethyldisilylalkane polymer photoresist  
 IT Resists  
 (photo-, allylvinyltetramethyldisilylalkane polymers as, for dry etching-resistant pattern formation)  
 IT 593-60-2, Vinyl bromide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Grignard reaction of, with allylmethoxytetramethyldisilylethane)  
 IT 106-95-6, Allyl bromide, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Grignard reaction of, with dimethoxytetramethyldisilylethane)  
 IT 13528-93-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (methoxylation of)  
 IT 5284-79-7, 2,6-Di(4-azidobenzal)-4-methylcyclohexanone  
 RL: USES (Uses)  
 (photoresist compns. contg. allylvinyltetramethyldisilylalkane polymers and)  
 IT 76490-69-2P 122739-01-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and Grignard reaction of)  
 IT 122721-59-9P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and polymn. of)  
 IT **122721-60-2P**  
 RL: PREP (Preparation)  
 (prepn. of, as **photoresist**, for dry etching-resistant **pattern** formation)  
 IT **122721-60-2P**  
 RL: PREP (Preparation)  
 (prepn. of, as **photoresist**, for dry etching-resistant **pattern** formation)  
 RN 122721-60-2 HCAPLUS  
 CN Silane, [2-(dimethyl-2-propenylsilyl)ethyl]ethenyldimethyl-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 122721-59-9  
 CMF C11 H24 Si2



L66 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1989:544135 HCAPLUS

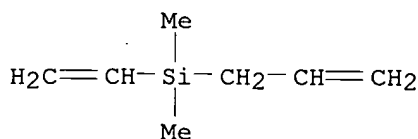
DN 111:144135  
 TI Silyl group-containing ethylene polymers, resist compositions, and patterning processes  
 IN Saigo, Kazuhide  
 PA NEC Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08F030-08  
 ICS C08F299-00; G03C001-00; G03C001-71  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01101309	A2	19890419	JP 1987-258437	19871015
PRAI	JP 1987-258437		19871015		
AB	Polymers (mol. wt. 3000-1,000,000) contg. repeating units of the formula CH <sub>2</sub> CH(SiMe <sub>2</sub> CH <sub>2</sub> CH:CH <sub>2</sub> ), resist compns. contg. these polymers and bisazide compds., and 2-layer resist patterning processes which use these resist compns. as the top resist layer are claimed. The polymers give patterns having excellent dry etching resistance and are useful for the fabrication of semiconductors, magnetic bubble memories, etc. Thus, allyldimethylvinylsilane was polymd. in the presence of n-BuLi to give a polymer with a wt. av. mol. wt. of 47,000. A soln. of the polymer and 2,6-di(4-azidobenzal)-4-methylcyclohexanone in xylene was spin-coated on a MP 1300 (resist)-coated Si substrate, UV irradiated through a mask, developed, and etched to form a submicron pattern.				
ST	silylethylene polymer photoresist; diazide sensitizer polysilylethylene photoresist; allyldimethylvinylsilane polymer photoresist				
IT	Resists (photo-, allyldimethylvinylsilane polymers as, for dry etching-resistant pattern formation)				
IT	5284-79-7 RL: USES (Uses) (photoresist compns. contg. allyldimethylvinylsilane polymers and)				
IT	<b>26838-34-6P</b> , Poly(allyldimethylvinylsilane) RL: PREP (Preparation) (prepn. of, as <b>photoresists</b> , for dry etching-resistant pattern formation)				
IT	<b>26838-34-6P</b> , Poly(allyldimethylvinylsilane) RL: PREP (Preparation) (prepn. of, as <b>photoresists</b> , for dry etching-resistant pattern formation)				
RN	26838-34-6 HCAPLUS				
CN	Silane, ethenyldimethyl-2-propenyl-, homopolymer (9CI) (CA INDEX NAME)				

CM 1

CRN 22146-25-4  
 CMF C7 H14 Si



L66 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1989:544134 HCAPLUS

DN 111:144134

TI Silyl group-containing ethylene polymers, resist compositions, and patterning processes

IN Saigo, Kazuhide

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F030-08

ICS C08F299-08; G03C001-00; G03C001-71

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01101308	A2	19890419	JP 1987-258435	19871015
	JP 06015582	B4	19940302		
PRAI	JP 1987-258435		19871015		

AB Polymers (mol. wt. 3000-1,000,000) contg. repeating units of the formula  $\text{CH}_2\text{CH}(\text{SiMe}_2\text{OSiMe}_2\text{CH}_2\text{CH}:\text{CH}_2)$ , resist compns. contg. these polymers and bisazide compds., and 2-layer resist patterning processes which use these resist compns. as the top resist layer are claimed. The polymers give patterns having excellent dry etching resistance and are useful for the fabrication of semiconductors, magnetic bubble memories, etc. Thus,  $(\text{ClSiMe}_2)_2\text{O}$  was treated with  $\text{CH}_2:\text{CHCH}_2\text{MgBr}$  followed by  $\text{CH}_2:\text{CHMgBr}$  to give 1-allyl-3-vinyltetramethyldisiloxane, which was polymd. in the presence of  $n\text{-BuLi}$  to give a polymer with a wt. av. mol. wt. of 31,000. A soln. of the polymer and 2,6-di(4-azidobenzal)-4-methylcyclohexanone in xylene was spin-coated on a MP 1300 (resist)-coated Si substrate, UV irradiated through a mask, developed, and etched to form a submicron pattern.

ST silylethylene polymer photoresist; diazide sensitizer polysilylethylene photoresist; allylvinyltetramethyldisiloxane polymer photoresist

IT Resists

(photo-, allylvinyltetramethyldisiloxane polymers as, for dry etching-resistant pattern formation)

IT 2401-73-2, 1,3-Dichlorotetramethyldisiloxane

RL: RCT (Reactant); RACT (Reactant or reagent)

(Grignard reaction of)

IT 593-60-2, Vinyl bromide

RL: RCT (Reactant); RACT (Reactant or reagent)

(Grignard reaction of, with allylchlorotetramethyldisiloxane)

IT 1730-25-2, Allylmagnesium bromide

RL: RCT (Reactant); RACT (Reactant or reagent)

(Grignard reaction of, with dichlorotetramethyldisiloxane)

IT 5284-79-7

RL: USES (Uses)  
 (photoresist compns. contg. allylvinyltetramethyldisiloxane polymers and)

IT 18244-19-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and Grignard reaction of)

IT 55967-53-8P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and polymn. of)

IT **122721-64-6P**  
 RL: PREP (Preparation)  
 (prepn. of, as **photoresists**, for dry etching-resistant pattern formation)

IT **122721-64-6P**  
 RL: PREP (Preparation)  
 (prepn. of, as **photoresists**, for dry etching-resistant pattern formation)

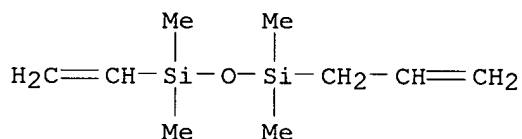
RN 122721-64-6 HCAPLUS

CN Disiloxane, 1-ethenyl-1,1,3,3-tetramethyl-3-(2-propenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 55967-53-8

CMF C9 H20 O Si2



L66 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1989:467954 HCAPLUS

DN 111:67954

TI Pattern forming on uneven surfaces

IN Kokado, Yuichi; Kito, Makoto

PA Hitachi, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08J007-00  
 ICS C08J007-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63297435	A2	19881205	JP 1987-131412	19870529
	JP 07113774	B4	19951206		
	US 4863557	A	19890905	US 1988-198197	19880525
PRAI	JP 1987-131412		19870529		



AB Pattern forming on uneven surfaces (e.g., line-and-space patterns on grooved surfaces) involves forming a resist pattern by a resist film formed by plasma polymn., followed by dry etching. The resist pattern may contain an O plasma-etchable underlayer.

ST photoresist pattern forming plasma polymn

IT Recording apparatus  
(magnetic heads, permalloy, manuf. of, photoresist patterning in)

IT Resists  
(photo-, patterning with, plasma polymn. in)

IT Polymerization  
(plasma, in photoresist patterning)

IT 11068-82-9, Permalloy  
RL: DEV (Device component use); USES (Uses)  
(magnetic recording heads from, manuf. of, photoresist patterning on)

IT 25013-04-1  
RL: USES (Uses)  
(oxygen plasma-etchable, plasma-polymd., in photoresist patterning)

IT 9080-67-5, Chloromethylstyrene polymer **121912-69-4**  
RL: USES (Uses)  
(**photoresists**, plasma-polymd., **patterning** with)

IT **121912-69-4**  
RL: USES (Uses)  
(**photoresists**, plasma-polymd., **patterning** with)

RN 121912-69-4 HCAPLUS

CN 2-Pentanone, 4-methyl-, polymer with ethenyltrimethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 754-05-2

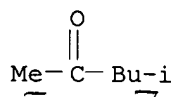
CMF C5 H12 Si

Me<sub>3</sub>Si-CH=CH<sub>2</sub>

CM 2

CRN 108-10-1

CMF C6 H12 O



L66 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1986:488686 HCAPLUS

DN 105:88686

TI Radiation-sensitive resists

IN Tanaka, Haruyori; Morita, Masao

PA Nippon Telegraph and Telephone Public Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03C001-71

ICS C08F030-08; G03C001-00; G03C005-08; G03F007-10

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60212757	A2	19851025	JP 1984-67487	19840406
PRAI	JP 1984-67487		19840406		

AB Radiation-sensitive resists are composed of copolymers having the general formula  $(CH_2CHR)m[CH_2CR1(CO_2CH_2R_2)]n(CH_2CHR_3)p[CH_2CR1(CO_2CH_2R_4)]q$  [R, R<sub>2</sub> = SiMe<sub>2</sub>R<sub>5</sub>, CH<sub>2</sub>SiMe<sub>2</sub>R<sub>5</sub>, CH<sub>2</sub>CH<sub>2</sub>SiMe<sub>2</sub>R<sub>5</sub>, SiMeR<sub>5</sub>, SiR<sub>5</sub> (R<sub>5</sub> = R<sub>6</sub>C<sub>6</sub>H<sub>4</sub>; R<sub>6</sub> = Cl, I, Br, CH<sub>2</sub>Cl, CH<sub>2</sub>O<sub>2</sub>CCMe:CH<sub>2</sub>); R<sub>1</sub> = H, Me; R<sub>3</sub>, R<sub>4</sub> = SiMe<sub>2</sub>Ph, CH<sub>2</sub>SiMe<sub>2</sub>Ph, CH<sub>2</sub>CH<sub>2</sub>SiMe<sub>2</sub>Ph, SiMePh<sub>2</sub>, SiPh<sub>3</sub>; m, n = 0, pos. integer; m + n .fwdarw. 1; p, q = 0, pos. integer]. The resists exhibit high sensitivity and provide high-resoln. patterns. Thus, phenyldimethylvinylsilane and (phenyldimethyl)silylmethyl methacrylate were copolymd. in the presence of BuLi, the copolymer chloromethylated by reaction with ClH<sub>2</sub>COme to obtain a resist, coated on a Si wafer, irradiated with an electron beam, and developed with a MeCOEt-2-PrOH (4:1) mixt. to give a resist pattern with a sensitivity (the exposure giving 50% thickness loss upon development) of 3 .mu.C/cm<sup>2</sup>.

ST radiation resist silylalkyl methacrylate copolymer; electron resist silylalkyl methacrylate copolymer; silicon copolymer electron resist

IT Vinyl compounds, polymers

RL: USES (Uses)

(polymers, silicon-contg., electron-beam resists from, for high-resoln. patterns)

IT Resists

(electron-beam, silylalkyl methacrylate copolymers and related copolymers as, for high-resoln. pattern formation)

IT Acrylic polymers, uses and miscellaneous

RL: USES (Uses)

(silicon-contg., electron-beam resists from, for high-resoln. pattern formation)

IT 79-41-4D, reaction products with chloromethylated phenyldimethylsilylmethyl methacrylate polymer or poly(phenyldimethylvinylsilane) **26744-16-1D**, chlorinated or chloromethylated 71685-30-8D, chlorinated or chloromethylated **103747-33-7D**, chlorinated or chloromethylated

RL: USES (Uses)

(electron-beam **resist**, for high-resoln. **pattern** formation)

IT **26744-16-1D**, chlorinated or chloromethylated **103747-33-7D**, chlorinated or chloromethylated

RL: USES (Uses)

(electron-beam **resist**, for high-resoln. **pattern** formation)

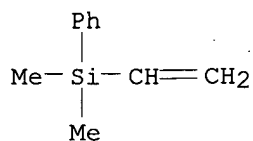
RN 26744-16-1 HCAPLUS

CN Silane, ethenyldimethylphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1125-26-4

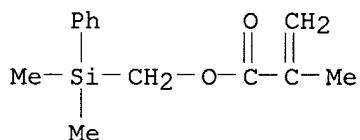
CMF C10 H14 Si



RN 103747-33-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, (dimethylphenylsilyl)methyl ester, polymer  
 with ethenyldimethylphenylsilane (9CI) (CA INDEX NAME)

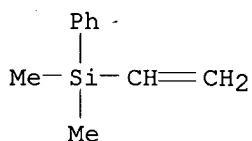
CM 1

CRN 18052-92-1  
 CMF C13 H18 O2 Si



CM 2

CRN 1125-26-4  
 CMF C10 H14 Si



L66 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1982:113491 HCAPLUS  
 DN 96:113491  
 TI Negative resist for high energy radiation  
 IN Atarashi, Yuji; Kataoka, Mutsuo  
 PA Toray Industries, Inc. , Japan  
 SO U.S., 14 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC G03C001-68  
 NCL 430287000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 4301231	A	19811117	US 1980-121914	19800215
PRAI US 1980-121914		19800215		

AB Neg. working resist compns. for exposure by electron beams or x-rays are composed of sol., film-forming org. polymers contg. vinyl silyl groups as side chains. These compns. exhibit a high contrast and are less sensitive to visible light than compns. contg. vinyl groups alone. Thus, poly[3-(dimethylvinylsilyl)propargyl acrylate], prepd. by treating poly(N-acryloylbenzotriazole) with 3-(dimethylvinylsilyl)propargyl alc. showed an .eta.sp/C of 1.73 and a vinyl silyl group d. of 4.91 .times. 10<sup>-3</sup> equiv/g. A resist prepd. from the polymer showed a sensitivity (Q0.5) of 1.6 .times. 10<sup>-7</sup> C/cm<sup>2</sup> and a contrast (.gamma.0.5) of 0.75 to an electron beam at an accelerating voltage of 30 kV.

ST radiation resist vinyl silyl polymer

IT Resists  
(electron-beam, neg.-working, vinylsilyl group-contg. polymers as)

IT Resists  
(x-ray, neg.-working, vinylsilyl group-contg. polymers as)

IT 100-46-9D, reaction products with acid group-contg. polymers 9003-01-4D, vinylsilyl group-contg. amides 9011-13-6D, vinylsilyl group-contg. amides 9011-16-9D, (dimethylvinylsilyl)benzyl amide 26298-64-6D, (dimethylvinylsilyl)benzyl amide 26426-80-2D, (dimethylvinylsilyl)benzyl amide 26711-22-8D, dimethylvinylsilyl group-contg. amides 72144-40-2D, reaction products with acid group-contg. polymers 72144-41-3D, reaction products with acid group-contg. polymers 72144-44-6D, reaction products with acid group-contg. polymers 75304-15-3D, reaction products with acid group-contg. polymers 81030-76-4 81030-84-4 81030-85-5 81030-86-6 81030-87-7 81030-88-8 **81031-70-1 81031-71-2 81031-72-3 81031-73-4 81031-74-5 81031-75-6** 81031-92-7 81031-93-8 81031-94-9 81031-95-0 81031-96-1 81031-97-2 81031-98-3 81032-01-1 81032-02-2

RL: USES (Uses)  
(electron-beam **resist**, neg.-working)

IT 67178-30-7D, reaction products with alcs. and amines  
RL: USES (Uses)  
(electron-beam resists, neg.-working)

IT 72144-38-8 72308-86-2 72308-88-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of cellulose acetate)

IT 66259-08-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of hydroxy group-contg. compds.)

IT 66259-08-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of poly(vinyl alc.))

IT 80943-90-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, by Et vinyl ether-maleic anhydride copolymer)

IT 72769-77-8 72769-79-0 74677-53-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, by carboxy group-contg. polymers)

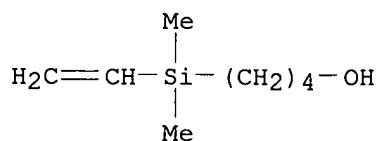
IT 74677-54-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, by poly(acryloylbenzotriazole))

IT 80943-89-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with poly(chloroethyl vinyl ether))

IT 74677-55-7 75304-13-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with polyepichlorohydrin)

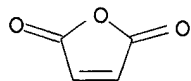
IT 24969-06-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with potassium (dimethylvinylsilyl)benzoate)  
 IT 29160-08-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with potassium(methyldivinylsilyl)butyrate)  
 IT **81031-70-1 81031-71-2 81031-72-3**  
**81031-73-4 81031-74-5 81031-75-6**  
 RL: USES (Uses)  
 (electron-beam **resist**, neg.-working)  
 RN 81031-70-1 HCAPLUS  
 CN 2,5-Furandione, polymer with ethene, 4-(ethenyldimethylsilyl)butyl ester  
 (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 72769-77-8  
 CMF C8 H18 O Si

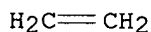


CM 2  
 CRN 9006-26-2  
 CMF (C4 H2 O3 . C2 H4)x  
 CCI PMS

CM 3  
 CRN 108-31-6  
 CMF C4 H2 O3



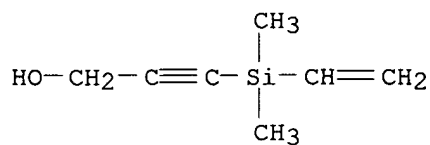
CM 4  
 CRN 74-85-1  
 CMF C2 H4



RN 81031-71-2 HCAPLUS  
 CN 2,5-Furandione, polymer with ethene, 3-(ethenyldimethylsilyl)-2-propynyl  
 ester (9CI) (CA INDEX NAME)

CM 1

CRN 74677-53-5  
CMF C7 H12 O Si

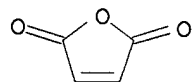


CM 2

CRN 9006-26-2  
CMF (C4 H2 O3 . C2 H4) x  
CCI PMS

CM 3

CRN 108-31-6  
CMF C4 H2 O3



CM 4

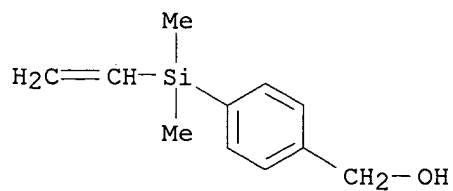
CRN 74-85-1  
CMF C2 H4



RN 81031-72-3 HCAPLUS  
CN 2,5-Furandione, polymer with ethoxyethene, [4-(ethenyldimethylsilyl)phenyl]methyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 80943-90-4  
CMF C11 H16 O Si



CM 2

CRN 26711-22-8

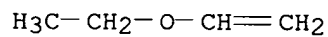
CMF (C4 H8 O . C4 H2 O3) x

CCI PMS

CM 3

CRN 109-92-2

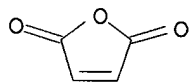
CMF C4 H8 O



CM 4

CRN 108-31-6

CMF C4 H2 O3



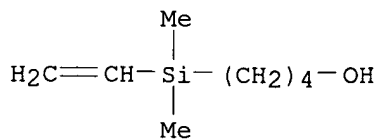
RN 81031-73-4 HCAPLUS

CN 2,5-Furandione, polymer with ethoxyethene, 4-(ethenyldimethylsilyl)butyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 72769-77-8

CMF C8 H18 O Si

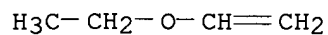


CM 2

CRN 26711-22-8  
 CMF (C4 H8 O . C4 H2 O3)x  
 CCI PMS

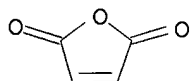
CM 3

CRN 109-92-2  
 CMF C4 H8 O



CM 4

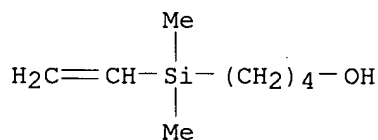
CRN 108-31-6  
 CMF C4 H2 O3



RN 81031-74-5 HCAPLUS  
 CN 2,5-Furandione, polymer with ethenylbenzene, 4-(ethenyldimethylsilyl)butyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 72769-77-8  
 CMF C8 H18 O Si



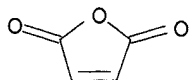
CM 2

CRN 9011-13-6  
 CMF (C8 H8 . C4 H2 O3)x  
 CCI PMS

CM 3

CRN 108-31-6  
 CMF C4 H2 O3

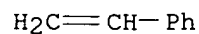




CM 4

CRN 100-42-5

CMF C8 H8



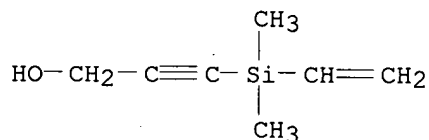
RN 81031-75-6 HCAPLUS

CN 2,5-Furandione, polymer with ethenylbenzene, 3-(ethenyldimethylsilyl)-2-propynyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 74677-53-5

CMF C7 H12 O Si



CM 2

CRN 9011-13-6

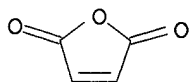
CMF (C8 H8 . C4 H2 O3)x

CCI PMS

CM 3

CRN 108-31-6

CMF C4 H2 O3



CM 4

CRN 100-42-5

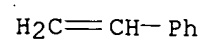
CMF C8 H8

LEE

10/085935

9/16/03

Page 65



**SEARCH REQUEST FORM****Scientific and Technical Information Center**

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 9-16-03  
 Art Unit: 1752 Phone Number: 305-0504 Serial Number: 10/085,935 R  
 Mail Box and Bldg/Room Location: 9805 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Silicon-containing polymer, Resist composition & Patterning

Inventors (please provide full names): Takeda, Takanobu; Hatakeyama, Jun; Process  
Ishihara, Toshinobu; Kubota, Tohru; Kubota, Yasufui

Earliest Priority Filing Date: 3-1-2002

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

- Please search for a silicon-containing polymer comprising recurring unit of formula (2) of cl. # 1

(examples for the polymer are also attached)

**STAFF USE ONLY**

	Type of Search	Vendors and cost where applicable
Searcher: <u>K. Fuller</u>	NA Sequence (#) _____	STN <u>✓</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structured (#) <u>2</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____
Date Completed: <u>9/17/03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>20</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>20</u>	Other _____	Other (specify) _____

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provided by InfoChem.

STRUCTURE FILE UPDATES: 16 SEP 2003 HIGHEST RN 586945-00-8  
DICTIONARY FILE UPDATES: 16 SEP 2003 HIGHEST RN 586945-00-8

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STN Note 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 16:52:37 ON 17 SEP 2003  
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FILE COVERS 1907 - 17 Sep 2003 VOL 139 ISS 12  
FILE LAST UPDATED: 16 Sep 2003 (20030916/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE

L42 STR

CH2:CH-Si  
3 1 2

NODE ATTRIBUTES:

NSPEC IS RC AT 2  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
L44 9887 SEA FILE=REGISTRY SSS FUL L42  
L68 STR

CH2-CH-Si  
3 1 2

NODE ATTRIBUTES:  
NSPEC IS R AT 2  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE  
L70 1320 SEA FILE=REGISTRY SUB=L44 SSS FUL L68  
L71 417 SEA FILE=REGISTRY ABB=ON L70 AND PMS/CI  
L72 447 SEA FILE=HCAPLUS ABB=ON L71  
L73 38 SEA FILE=HCAPLUS ABB=ON L72(L)?RESIST?  
L74 18 SEA FILE=HCAPLUS ABB=ON L73(L) (PREP OR IMF OR SPN)/RL  
L75 2 SEA FILE=HCAPLUS ABB=ON L73 AND PATTERN?  
L76 19 SEA FILE=HCAPLUS ABB=ON L74 OR L75

=> D L76 ALL HITSTR 1-19

L76 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:411894 HCAPLUS  
DN 138:403142  
TI Water-based silicone compositions for coatings on rubbers and fibers  
IN Iguchi, Yoshinori  
PA Shin-Etsu Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 14 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM C08L083-04  
ICS C08K009-06; C09D005-00; C09D183-04; C09D183-06; C09D183-08;  
C08L083-08; C08L083-06

CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 39, 40

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003155411	A2	20030530	JP 2001-358869	20011126
PRAI	JP 2001-358869		20011126		

AB The compns. giving coatings with good adhesion to substrates, wear resistance, and surface smoothness, comprise (A) OH-terminated organopolysiloxanes having repeating units [R12SiO2/2] and/or [R2SiO3/2] (R1, R2 = C1-20 hydrocarbyl) to satisfy [R12SiO2/2]/[R2SiO3/2] mol. ratio 1/(0-0.01) and complex viscosity at 25.degree. .gtoreq.1 .times. 104 mPa-s

*417 polymers with the Si in a ring and attached to a vinyl group*

100, (B) amido-, carboxyl- and epoxy-free organotrialkoxysilanes represented by  $R_3Si(OR_4)_3$  ( $R_3$  = C1-20 hydrocarbyl;  $R_4$  = C1-6 hydrocarbyl) and/or their partial-hydrolyzed condensates 0.01-10, (C) amido- and carboxyl-contg. organoalkoxysilanes and/or their partial-hydrolyzed condensates 1-10, (D) epoxy-contg. organoalkoxysilanes and/or their partial-hydrolyzed condensates 1-10, (E) curing catalysts 0.01-10, (F) spherical silicone rubber particles having av. size 0.5-50  $\mu m$  10-100, and (G) hydrophobic particles which have av. size 5-1000 nm and structural units  $[SiO_4/2]$  and/or  $[R_6SiO_3/2]$  and are surface-silylated with units  $[R_5SiO_1/2]$  ( $R_5, R_6$  = C1-20 monovalent org. residue) 20-200 parts. Thus, an aq. compn. contg. octamethylcyclotetrasiloxane homopolymer (complex viscosity 2.3  $\times 10^6$  mPa-s), phenyltriethoxysilane, a reaction product of maleic anhydride with  $\gamma$ -aminopropyltriethoxysilane,  $\gamma$ -glycidoxypropyltrimethoxysilane, dibutyltin dilaurate, rubber powder prepd. from vinyl-terminated dimethylsiloxane and Me hydrogen polysiloxane, and trimethylsilylated silica particles prepd. from Snowtex O (colloidal silica) and trimethylsilanol was applied on an EPDM solid rubber sheet and heated to give a coating showing good surface smoothness.

ST octamethylcyclotetrasiloxane homopolymer phenyltriethoxysilane water based silicone coating; maleic anhydride aminopropyltriethoxysilane product siloxane coating; coating rubber fiber water based silicone; glycidoxypropyltrimethoxysilane polysiloxane coating; silicone rubber particle polysiloxane coating; silylation hydrophobic surface silica particle silicone coating

IT Coating materials

(abrasion-resistant; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT Coating materials

(antifriction; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT Silsesquioxanes

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (particle, with trimethylsilylated surface; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT Silicone rubber, uses

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (particle; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT Silsesquioxanes

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polysiloxane-, coatings; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT Polysiloxanes, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (silsesquioxane-, coatings; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 528894-27-1P 528894-28-2P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)  
(coatings; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 7631-86-9, Snowtex O, uses  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(colloidal, with trimethylsilylated surface; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 1066-40-6, Trimethylsilanol  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(hydrophobic particle surface treated with; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 29382-69-2P, Vinyltrimethoxysilane homopolymer **156430-49-8P**

RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(particle contg. silica and, with trimethylsilylated surface; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 25498-03-7P, Methyltrimethoxysilane homopolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, SRU  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(particle, with trimethylsilylated surface; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 9016-00-6DP, Poly[oxy(dimethylsilylene)], vinyl-terminated, reaction products with Me hydrogen polysiloxane 31900-57-9DP, Dimethylsilanediol homopolymer, vinyl-terminated, reaction products with Me hydrogen polysiloxane 156118-35-3DP, Dimethylsilanediol-methylsilanediol copolymer, trimethylsilyl-terminated, reaction products with vinyl-terminated dimethylsiloxane

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(rubber, particle; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 31900-57-9DP, Dimethylsilanediol homopolymer, trimethylsilyl-terminated 42557-10-8, Dimethylsiloxane, trimethylsilyl-terminated  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(silicone rubber particle contg.; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 33525-68-7P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

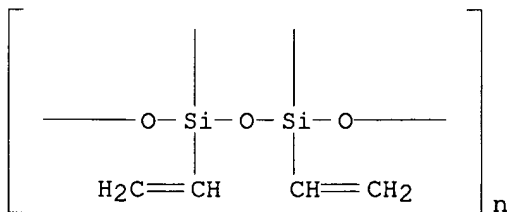
(water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)

IT 108-31-6, Maleic anhydride, reactions 919-30-2, .gamma.-Aminopropyltriethoxysilane

RL: RCT (Reactant); RACT (Reactant or reagent)

(water-based silicone compns. contg. rubber particles and hydrophobic

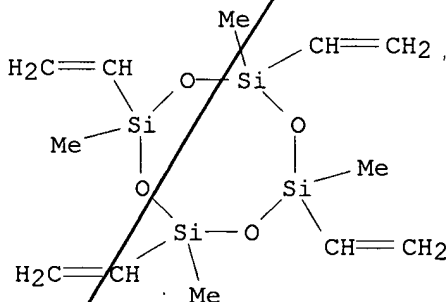
particles for wear-resistant smooth coatings on rubbers and fibers)  
 IT **156430-49-8P**  
 RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (particle contg. silica and, with trimethylsilylated surface; water-based silicone compns. contg. rubber particles and hydrophobic particles for wear-resistant smooth coatings on rubbers and fibers)  
 RN 156430-49-8 HCAPLUS  
 CN Poly[(1,3-diethenyl-1,3:1,3-disiloxanediylidene)-1,3-bis(oxy)] (9CI) (CA INDEX NAME)



L76 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:837302 HCAPLUS  
 DN 138:262576  
 TI Development of electron beam analogue resist using silicone polymer  
 AU Satoh, Kazuo; Fukuda, Hiroki; Sakurai, Yoshiaki; Yotsuya, Tsutomu  
 CS Prod. Technol. Div., Technology Research Institute of Osaka Prefecture, Izumi, 594-1157, Japan  
 SO Kenkyusho Hokoku (Osaka-furitsu Sangyo Gijutsu Sogo Kenkyusho) (2002), 16, 75-78  
 CODEN: KEHOFI; ISSN: 1343-3555  
 PB Osaka-furitsu Sangyo Gijutsu Sogo Kenkyusho  
 DT Journal  
 LA Japanese  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38  
 AB Phys. properties of dimethylsiloxane polymer (DMS) and vinylmethylsiloxane (1-2%)-dimethylsiloxane copolymer (VMDMS) were investigated for electron beam. Exptl. results showed that DMS and VMDMS were neg. type resists. Sensitivity and .gamma. values of DMS were 1.5 .mu.C/cm2 and 1.2, while those of VMDMS were 0.9 .mu.C/cm2 and 1.3, resp. DMS and VMDMS were more sensitive than com. available resists. In addn., .gamma. values of DMS and VMDMS were suitable for fabricating optical elements. Sensitivity curves of DMS and VMDMS were affected neither by prebaking temp. nor by developing time. This implies that they are stable electron beam resists. Based on the sensitivity curve, we fabricated a four-level computer generated hologram (CGH) on a glass substrate with ITO film by using the VMDMS resist. The CGH was able to reconstruct the target **pattern** when it was illuminated with He-Ne laser.  
 ST electron beam resist silicone polymer  
 IT Electron beam resists  
 Holography  
 (development of electron beam analog resist using silicone polymer)



IT Polysiloxanes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (development of electron beam analog resist using silicone polymer)  
 IT 50926-11-9, ITO  
 RL: DEV (Device component use); USES (Uses)  
 (development of electron beam analog resist using silicone polymer)  
 IT 31900-57-9, Dimethylsiloxane polymer **65503-75-5**  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (development of electron beam analog **resist** using silicone polymer)  
 IT **65503-75-5**  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (development of electron beam analog **resist** using silicone polymer)  
 RN 65503-75-5 HCAPLUS  
 CN Cyclotetrasiloxane, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethyl-, homopolymer  
 (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 2554-06-5  
 CMF C12 H24 O4 Si4



L76 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:671932 HCAPLUS  
 DN 137:202031  
 TI Preparation and **patterning** process of silicon-containing  
 chemical amplification positive resist compositions  
 IN Takeda, Takano, Jun; Hatakeyama, Jun; Ishihara, Toshinobu; Kubota, Tooru;  
 Kubota, Yasufumi  
 PA Shin-Etsu Chemical Co., Ltd., Japan  
 SO Eur. Pat. Appl., 33 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM C08F030-08  
 ICS G03F007-075; C08G077-00  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38, 76  
 FAN.CNT 1

*applicants*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1236745	A2	20020904	EP 2002-251419	20020228

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2002348332 A2 20021204 JP 2002-47351 20020225

US 2002168581 A1 20021114 US 2002-85935 20020301

PRAI JP 2001-56543 A 20010301

AB Novel silicon-contg. polymers, which are obtained by copolyng. vinylsilane with a compd. having a low electron d. unsatd. bond such as maleic anhydride, maleimide derivs. or tetrafluoroethylene, are suitable as the base resin in chem. amplified pos. resist compns. used for micropatterning in a process for the fabrication of semiconductor devices. The resist compns., which are sensitive to high-energy radiation, such as deep-UV light, laser beams, electron beams or X-rays, can form high aspect ratio **patterns** with high sensitivity and resolu. as well as improved resistance to oxygen or halogen gas plasma etching. Thus, maleic anhydride and trimethylvinylsilane were polymd. in THF using radical polymn. technique; the silicone polymer, photoacid generator, dissoln. inhibitor were thoroughly dissolved in propylene glycol monomethyl ether acetate; the resist soln. was spin coated onto cured DUV-30/novolac resist substrate and then baked at 100.degree. for 90 s to form a resist film of 0.2 .mu.m, followed by exposing to laser beam, baking at 100.degree. for 90 s, and developing in TMAH to obtain a pos. **pattern**; the resist **pattern** was then evaluated in sensitivity, resolu., and etc.

ST silicon contg chem amplification pos resist compn **patterning** process; maleimide vinyl polymer semiconductor device radiation sensitive resist; maleic anhydride trimethylvinylsilane copolymer resist device

IT Positive photoresists

(UV; silicon-contg. chem. amplification pos. resist compns. and **patterning** process thereof)

IT Phenolic resins, uses

RL: NUU (Other use, unclassified); USES (Uses)

(novolak, substrate layer; silicon-contg. chem. amplification pos. resist compns. and **patterning** process thereof)

IT Resists

(pos.-working radiation-sensitive; silicon-contg. chem. amplification pos. resist compns. and **patterning** process thereof)

IT Electron beam resists

(pos.-working; silicon-contg. chem. amplification pos. resist compns. and **patterning** process thereof)

IT Etching

Semiconductor device fabrication

(silicon-contg. chem. amplification pos. resist compns. and **patterning** process thereof)

IT Polymers, preparation

RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses)

(silicon-contg.; silicon-contg. chem. amplification pos. resist compns. and **patterning** process thereof)

IT 26702-38-5P, Maleic anhydride-trimethylvinylsilane copolymer

452912-28-6P, N-Methylmaleimide-trimethylvinylsilane copolymer

452912-29-7P 452912-30-0P, Trimethylvinylsilane-tetrafluoroethylene

copolymer **452912-31-1P**, Maleic anhydride-

vinylheptamethylcyclotetrasiloxane copolymer 452912-32-2P, Maleic

anhydride-bis(trimethylsilylmethyl)vinylmethylsilane) copolymer

**452912-33-3P**, Maleic anhydride-vinylheptamethylcyclotetrasiloxane-

1-ethylcyclopentyl methacrylate copolymer 452912-34-4P, Maleic

anhydride-bis(trimethylsilylmethyl)vinylmethylsilane-1-ethylcyclopentyl

methacrylate copolymer **452912-35-5P**, Maleic anhydride-vinylheptamethylcyclotetrasiloxane-2-ethyl-2-adamantyl methacrylate copolymer **452912-65-1P**, Maleic anhydride-trimethylvinylsilane-1-ethylcyclopentyl methacrylate copolymer

RL: DEV (Device component use); **IMF (Industrial manufacture)**;  
POF (Polymer in formulation); PRP (Properties); **PREP (Preparation)**  
; USES (Uses)

(cured and uncured; silicon-contg. chem. amplification pos.

**resist** compns. and **patterning** process thereof)

IT 409321-21-7 409321-23-9

RL: DEV (Device component use); MOA (Modifier or additive use); PRP  
(Properties); USES (Uses)

(dissoln. inhibitor; silicon-contg. chem. amplification pos. resist  
compns. and **patterning** process thereof)

IT 66003-76-7 66003-78-9

RL: DEV (Device component use); MOA (Modifier or additive use); PRP  
(Properties); USES (Uses)

(photoacid generator; silicon-contg. chem. amplification pos. resist  
compns. and **patterning** process thereof)

IT 84540-57-8, Propyleneglycol monomethyl ether acetate

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; silicon-contg. chem. amplification pos. resist compns. and  
**patterning** process thereof)

IT 59269-51-1, Polyhydroxystyrene

RL: NUU (Other use, unclassified); USES (Uses)

(substrate layer; silicon-contg. chem. amplification pos. resist  
compns. and **patterning** process thereof)

IT 81458-41-5, OFPR-800

RL: NUU (Other use, unclassified); USES (Uses)

(substrate; silicon-contg. chem. amplification pos. resist compns. and  
**patterning** process thereof)

IT **452912-31-1P**, Maleic anhydride-vinylheptamethylcyclotetrasiloxane

copolymer **452912-33-3P**, Maleic anhydride-

vinylheptamethylcyclotetrasiloxane-1-ethylcyclopentyl methacrylate

copolymer **452912-35-5P**, Maleic anhydride-

vinylheptamethylcyclotetrasiloxane-2-ethyl-2-adamantyl methacrylate  
copolymer

RL: DEV (Device component use); **IMF (Industrial manufacture)**;

POF (Polymer in formulation); PRP (Properties); **PREP (Preparation)**

; USES (Uses)

(cured and uncured; silicon-contg. chem. amplification pos.

**resist** compns. and **patterning** process thereof)

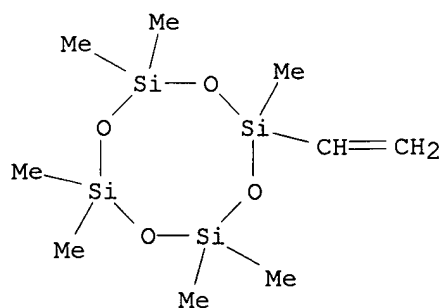
RN 452912-31-1 HCAPLUS

CN 2,5-Furandione, polymer with ethenylheptamethylcyclotetrasiloxane (9CI)  
(CA INDEX NAME)

CM 1

CRN 3763-39-1

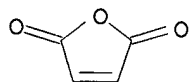
CMF C9 H24 O4 Si4



CM 2

CRN 108-31-6

CMF C4 H2 O3



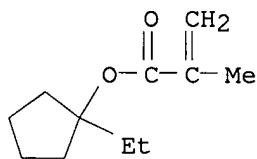
RN 452912-33-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with ethenylheptamethylcyclotetrasiloxane and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

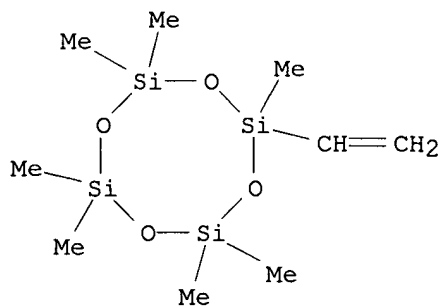
CMF C11 H18 O2



CM 2

CRN 3763-39-1

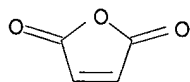
CMF C9 H24 O4 Si4



CM 3

CRN 108-31-6

CMF C4 H2 O3



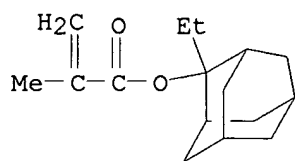
RN 452912-35-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester,  
polymer with ethenylheptamethylcyclotetrasiloxane and 2,5-furandione (9CI)  
(CA INDEX NAME)

CM 1

CRN 209982-56-9

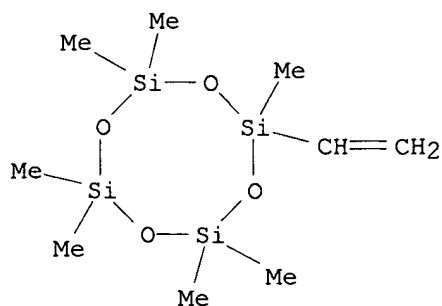
CMF C16 H24 O2



CM 2

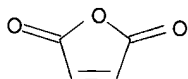
CRN 3763-39-1

CMF C9 H24 O4 Si4



CM 3

CRN 108-31-6  
CMF C4 H2 O3



L76 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:573382 HCAPLUS  
DN 135:154166  
TI Coating liquids for the formation of crack- and heat-resistant inorganic  
protecting films on surface  
IN Mizuno, Hirotaka; Hayashi, Hiroaki; Ohara, Yasuyuki  
PA Tsuchiya K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C09D005-25  
ICS C09D183-00  
CC 42-10 (Coatings, Inks, and Related Products)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001214093	A2	<u>20010807</u>	JP 2000-22728	20000131
PRAI	JP 2000-22728		20000131		

AB The liqs. useful for ceramics, glass, semiconductors, metals, etc., which can be applied by coating, then drying and baking, comprise (A) the hydrolyzates or/and hydrolytic condensates of silane compds.  $R_1\text{Si}(\text{OR}_2)_4-n$  ( $R_1$  = vinyl, amino, imino, epoxy, acryloxy, methacryloyloxy, Ph, mercapto and alkyl groups;  $R_2$  = C1-5 hydrocarbyl, alkoxy, acyl group;  $n$  = 0-2), (B) oxide particles and (C) mica particles. Thus, mixing 3-glycidoxypentyltrimethoxysilane 70.71 with water 32.32 and i-Pr Cellosolve 54.97 at room temp. for 1 h, combining the resulting mixt. with Al oxide microparticles (diam. 0.3  $\mu\text{m}$ ) 61.0 in a ball mill pot for 3 h, and mixing with mica powder (diam. 23  $\mu\text{m}$ ) 61.0 and a 15% i-Pr Cellosolve soln. of hydroxypropyl cellulose 186.7 g gave a coating liq. which was coated on a glass surface, dried at 100.degree. for 30 min and baked at

500.degree. for 1 h to give an inorg. film.

ST alkoxysilane hydrolyzate metal oxide mixt inorg coating formation; mica powder alkoxysilane hydrolyzate mixt inorg coating formation

IT Mica powders  
(coating compn.; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

IT Oxides (inorganic), uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(coating compn.; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

IT Silsesquioxanes  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(coating intermediate; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

IT Coating materials  
(heat-resistant, inorg., crack- and; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

IT 1344-28-1, Aluminum oxide, uses 13463-67-7, Titanium oxide, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(coating compn.; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

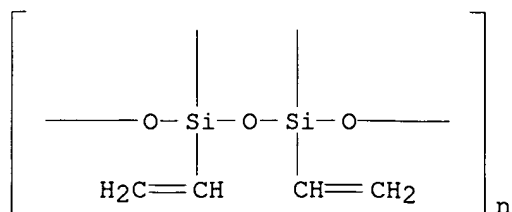
IT 7631-86-9P, Silica, uses  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(coating; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

IT 25930-91-0P, Methyltriethoxysilane homopolymer 29159-37-3P, .gamma.-Aminopropyltriethoxysilane polymer 29295-80-5P, 3-Mercaptopropyltrimethoxysilane homopolymer 29434-25-1P, Vinyltriethoxysilane polymer 56325-93-0P, .gamma.-Glycidoxypropyltrimethoxysilane polymer 153315-80-1P, Methyltriethoxysilane polymer ladder sru **156430-49-8P**, Vinyltriethoxysilane homopolymer ladder sru 161376-90-5P, 3-Aminopropyltriethoxysilane homopolymer ladder sru 162477-44-3P, 3-Glycidoxypropyltrimethoxysilane homopolymer ladder sru 167427-18-1P, .gamma.-Mercaptopropyltrimethoxysilane homopolymer ladder sru  
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)  
(intermediate; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

IT **156430-49-8P**, Vinyltriethoxysilane homopolymer ladder sru  
RL: **IMF (Industrial manufacture)**; RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)  
(intermediate; coating liqs. for formation of crack- and heat-resistant inorg. protecting films on surface)

RN 156430-49-8 HCAPLUS

CN Poly[(1,3-diethenyl-1,3:1,3-disiloxanediylidene)-1,3-bis(oxy)] (9CI) (CA INDEX NAME)



- L76 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2000:890048 HCAPLUS  
 DN 135:6890  
 TI Development of exterior wall water-resistant coatings based on siloxane modified elastic acrylic emulsion  
 AU Wang, Guojian  
 CS Department of Polymeric Materials, Tongji University, Shanghai, 200092, Peop. Rep. China  
 SO Huaxue Jiancai (2000), 16(6), 31-35  
 CODEN: HUJIFL; ISSN: 1004-1672  
 PB Huaxue Jiancai Bianjibu  
 DT Journal  
 LA Chinese  
 CC 42-7 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 58  
 AB The siloxane modified elastic acrylic emulsion was prep'd. from BA, MMA, AA, octamethylcyclotetrasiloxane (D4) and vinylcyclotetrasiloxane (Dv4) and using compatiblizer T by emulsion polymn. and seed polymn. resp., and was characterized by IR and DSC. The exterior wall water-resistant coatings was prep'd. using the emulsion (dosage: 25-35%), and its properties were studied. The results showed that emulsion polymn. process was superior to seed polymn. process in terms of properties of emulsion and coating. The emulsion with good comprehensive properties was obtained when content of siloxane monomer was 13% of that of total monomer, content of Dv4 in siloxane monomer should be 4-6%. Optimum dosage of compatiblizer T in emulsion polymn. was 2%. The dosage and particle size of filler remarkably affected properties of the coatings, and its optimum dosage was 30-35% and particle size was 50-80 .mu.m. The exterior wall coatings had good water resistance and aging resistance.  
 ST siloxane acrylate copolymer water resistance coating prepn; octamethylcyclotetrasiloxane vinylcyclotetrasiloxane acrylate acrylic methacrylate polymn; acrylic acrylate methacrylate polymn seed emulsion  
 IT Polysiloxanes, uses  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylate; prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)  
 IT Coating materials  
 (antifouling; prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)  
 IT Polymerization  
 (emulsion; prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)  
 IT Adsorption  
 Elongation, mechanical



Emulsions

Particle size

Tensile strength

Walls (construction)

(prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)

IT Polymerization

(seed; prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)

IT Coating materials

(water-resistant; prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)

IT 342420-41-1, T (compatibilizer)

RL: MOA (Modifier or additive use); USES (Uses)

(prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)

IT 342399-25-1P, Acrylic acid-butyl acrylate-methyl

methacrylate-octamethylcyclotetrasiloxane-Tetramethyltetravinylcyclotetrasiloxane copolymer

RL: PRP (Properties); SPN (Synthetic preparation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)

IT 342399-25-1P, Acrylic acid-butyl acrylate-methyl

methacrylate-octamethylcyclotetrasiloxane-Tetramethyltetravinylcyclotetrasiloxane copolymer

RL: PRP (Properties); SPN (Synthetic preparation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepn., mech. and thermal properties, and water adsorption of acrylic-siloxane water-resistant coatings for exterior wall)

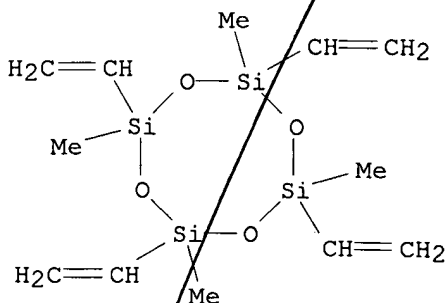
RN 342399-25-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate, octamethylcyclotetrasiloxane, 2-propenoic acid and 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

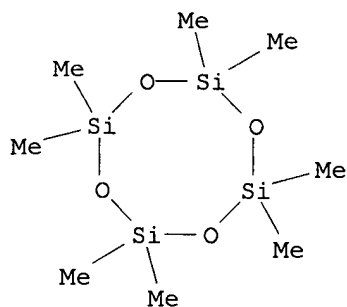
CMF C12 H24 O4 Si4



CM 2

CRN 556-67-2

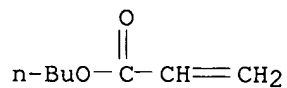
CMF C8 H24 O4 Si4



CM 3

CRN 141-32-2

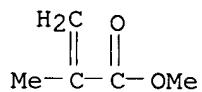
CMF C7 H12 O2



CM 4

CRN 80-62-6

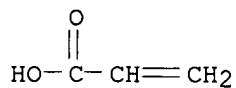
CMF C5 H8 O2



CM 5

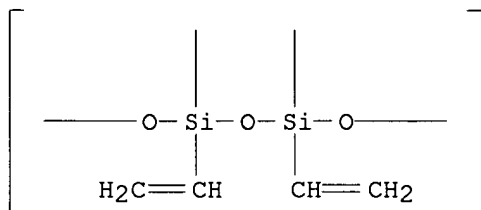
CRN 79-10-7

CMF C3 H4 O2



AN 2000:546293 HCAPLUS  
 DN 133:209318  
 TI Behavior of corrosion resisting silane coating on metallic surface  
 AU Yu, Yi; Xu, Ming-Xi; Wang, Nan; Li, De-Xiang  
 CS College of Environment, Chemistry and Chemical Engineering, Chongqing University, Chungking, 400044, Peop. Rep. China  
 SO Yingyong Huaxue (2000), 17(3), 331-333  
 CODEN: YIHUED; ISSN: 1000-0518  
 PB Yingyong Huaxue Bianji Weiyuanhui  
 DT Journal  
 LA Chinese  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55  
 AB The anticorrosion resistance behavior of silane agents(SA) such as vinyltriethoxysilane and methyltrimethoxysilane for iron-based substrate have been studied. A series of detection methods were used simultaneously for effective anal. and monitoring the hydrolysis process of SA films. It consists of the online FTIR spectroscopy, cond. measurement, XPS (for structure and component anal.), elliptical spectroscopy(for film thickness anal.) and electrochem. method(for corrosion examn.). The results showed that the rational thickness of the SA films was about 82 nm and there were chem. bondings between the iron substrate and SA film, which produces a large amt. of silanols in hydrolysis.  
 ST coating anticorrosion silane iron substrate; cond current electrochem silane anticorrosion soln  
 IT Coating materials  
 (anticorrosive; prepn. and property of corrosion resistant silane coating on metallic surface)  
 IT Electric conductivity  
 (prepn. and property of corrosion resistant silane coating on metallic surface)  
 IT Silsesquioxanes  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (prepn. and property of corrosion resistant silane coating on metallic surface)  
 IT Silanes  
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
 (vinyltriethoxysilane and methyltrimethoxysilane; prepn. and property of corrosion resistant silane coating on metallic surface)  
 IT 1185-55-3, Methyltrimethoxysilane  
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
 (elec. cond. property of hydrolysis soln. contg.)  
 IT 25498-03-7P, Methyltrimethoxysilane homopolymer 29434-25-1P, Vinyltriethoxysilane homopolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, ladder SRU **156430-49-8P**, Vinyltriethoxysilane homopolymer, ladder SRU  
 RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
 (prepn. and property of corrosion **resistant** silane coating on metallic surface)  
 IT 78-08-0, Vinyltriethoxysilane  
 RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)  
 (silane; elec. cond. property of hydrolysis soln. contg.)

IT **156430-49-8P**, Vinyltriethoxysilane homopolymer, ladder SRU  
 RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)  
 (prepn. and property of corrosion **resistant** silane coating on  
 metallic surface)  
 RN 156430-49-8 HCAPLUS  
 CN Poly[(1,3-diethenyl-1,3:1,3-disiloxanediylidene)-1,3-bis(oxy)] (9CI) (CA  
 INDEX NAME)



L76 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:608450 HCAPLUS  
 DN 129:231544  
 TI Polysiloxane flame retardant and fire-resistant aromatic polymer  
 composition therefor  
 IN Davis, Gary Charles; Lewis, Larry Neil  
 PA General Electric Co., USA  
 SO Eur. Pat. Appl., 8 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM C08L069-00  
 ICS C08L101-00; C08L083-04  
 ICI C08L069-00, C08L083-04; C08L101-00, C08L083-04  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 863185	A2	19980909	EP 1998-301404	19980226
	EP 863185	A3	20000202		
	EP 863185	B1	20030514		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 5955542	A	19990921	US 1997-810100	19970303
	JP 10316868	A2	19981202	JP 1998-44146	19980226
	CN 1192452	A	19980909	CN 1998-107144	19980303
PRAI	US 1997-810100	A	19970303		
AB	The transparent polymer compn., useful for moldings such as computers and business equipment, comprises (a) an arom.-based polymer (such as polycarbonates) and (b)a fireproofing agent contg. a copolymer of an aryl-contg. silicone compd. (such as triphenyl- or diphenyl-based) and a diorg. polysiloxane compd. Thus, 10 parts polysiloxane prepd. from trimethylsilyl-terminated octamethylcyclotetrasiloxane-cyclic tetramethyltetravinyltetrasiloxane copolymer and triphenylsilane was blended with 990 parts bisphenol A-based polycarbonate powder, and				

injection-molded to give a test piece showing good transparent and fire resistance.

ST polysiloxane flame retardant arom polymer blend; transparency polycarbonate aryl polysiloxane molding; bisphenol polycarbonate polysiloxane blend fireproof

IT Polysiloxanes, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fireproofing agents; polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT Fireproofing agents  
 (polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT Polycarbonates, uses  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT Molded plastics, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT Polymer blends  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polysiloxanes and polycarbonates; polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT **212792-35-3P**  
 RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)  
 (fireproofing agent; polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT 24936-68-3, Bisphenol A polycarbonate, uses 25037-45-0  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

IT **212792-35-3P**  
 RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)  
 (fireproofing agent; polysiloxane flame retardant and fire-resistant arom. polymer compn. therefor)

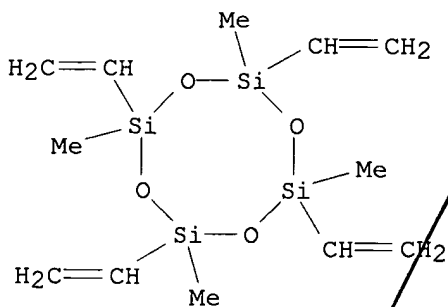
RN 212792-35-3 HCAPLUS

CN Cyclotetrasiloxane, octamethyl-, polymer with 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane and triphenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

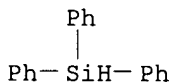
CMF C12 H24 O4 Si4



CM 2

CRN 789-25-3

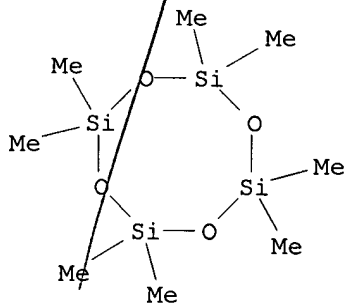
CMF C18 H16 Si



CM 3

CRN 556-67-2

CMF C8 H24 O4 Si4



L76 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1997:315039 HCAPLUS

DN 126:294225

TI Particulate silicone-modified acrylic rubber, particulate graft copolymer based on silicone-modified acrylic rubber, and thermoplastic resin composition

IN Miyatake, Nobuo; Yoshino, Hiroki; Hosoi, Hideki

PA Kaneka Corporation, Japan; Miyatake, Nobuo; Yoshino, Hiroki; Hosoi, Hideki

SO PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DT Patent

LA Japanese  
 IC ICM C08G077-42  
 ICS C08L033-06; C08L083-10  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 39

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9710283	A1	19970320	WO 1996-JP2566	19960909
	W: JP, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 791617	A1	19970827	EP 1996-929569	19960909
	EP 791617	B1	20020821		
	R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	AT 222591	E	20020915	AT 1996-929569	19960909
	US 5804655	A	19980908	US 1997-836324	19970507
PRAI	JP 1995-234108	A	19950912		
	JP 1996-128713	A	19960523		
	WO 1996-JP2566	W	19960909		
AB	The title rubber is prepd. by grafting (B) 45-5000 parts of a silicone rubber forming component comprising 99.9-80% of a low-mol. organosiloxane, 0.1-10% of a multifunctional silane compd. and 0-10% of a reactive silane compd. having a polymerizable unsatd. bond or a mercapto group in the mol. onto (A) 100 parts of a particulate acrylic rubber and, if necessary, grafting (C) 0.1-5000 parts an acrylic rubber forming component onto the obtained graft polymer without specific equipment at a high conversion. The rubber can improve weather and impact resistance of various thermoplastic resins.				
ST	PVC impact modifier acrylic silicone rubber; methyl methacrylate grafted acrylic silicone rubber; styrene acrylonitrile grafted acrylic silicone rubber; polyamide molding impact weather resistance				
IT	Silicone rubber, preparation RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (acrylic-silicone, graft polymers; particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)				
IT	Acrylic rubber RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (acrylic-siloxane, graft polymers; particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)				
IT	Polymerization (graft; particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)				
IT	Polyamides, properties Polycarbonates, properties Polyesters, properties RL: POF (Polymer in formulation); PRP (Properties); USES (Uses) (particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)				
IT	Plastics, properties RL: POF (Polymer in formulation); PRP (Properties); USES (Uses) (thermoplastics; particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)				
IT	25747-74-4P, Acrylonitrile-.alpha.-methylstyrene copolymer 185505-20-8P,				

Acrylonitrile-allyl methacrylate-butyl acrylate-.gamma.-methacryloyloxypropyltrimethoxysilane-octamethylcyclotetrasiloxane-styrene-tetraethoxysilane graft copolymer 189073-61-8P 189073-63-0P  
**189073-65-2P 189073-67-4P** 189073-69-6P 189073-70-9P  
 189073-72-1P 189073-73-2P 189073-74-3P

RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)

(particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact **resistance**)

IT 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer  
 9011-14-7, PMMA 25034-86-0, Methyl methacrylate-styrene copolymer  
 31621-07-5, Acrylonitrile-N-phenylmaleimide-styrene copolymer

RL: POF (Polymer in formulation); USES (Uses)

(particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)

IT 9002-86-2, PVC 24968-12-5, Polybutylene terephthalate 26062-94-2, Polybutylene terephthalate

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact resistance)

IT **189073-65-2P 189073-67-4P**

RL: **IMF (Industrial manufacture)**; MOA (Modifier or additive use); **PREP (Preparation)**; USES (Uses)

(particulate silicone-modified acrylic rubbers for thermoplastics for improved weather and impact **resistance**)

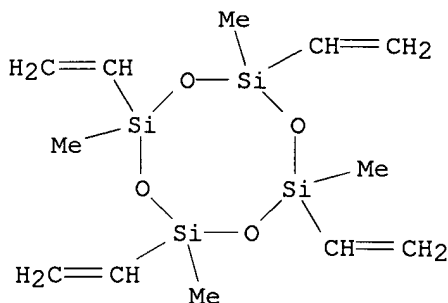
RN 189073-65-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-propenyl ester, polymer with butyl 2-propenoate, octamethylcyclotetrasiloxane, silicic acid (H4SiO4) tetraethyl ester, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

CMF C12 H24 O4 Si4

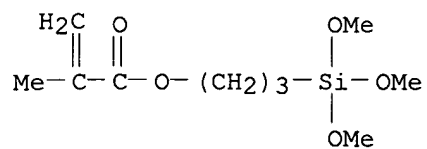


CM 2

CRN 2530-85-0

CMF C10 H20 O5 Si

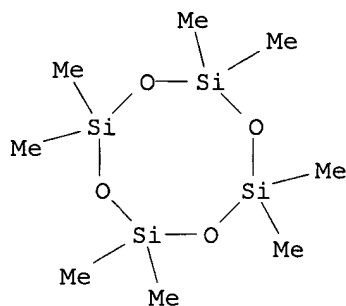




CM 3

CRN 556-67-2

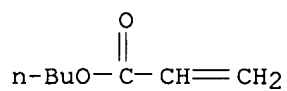
CMF C8 H24 O4 Si4



CM 4

CRN 141-32-2

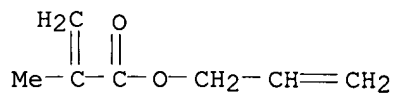
CMF C7 H12 O2



CM 5

CRN 96-05-9

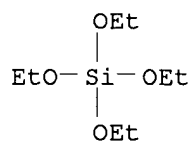
CMF C7 H10 O2



CM 6

CRN 78-10-4

CMF C8 H20 O4 Si



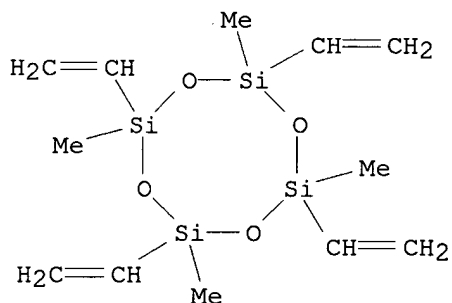
RN 189073-67-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate, octamethylcyclotetrasiloxane, 2-propenyl 2-methyl-2-propenoate, silicic acid (H<sub>4</sub>SiO<sub>4</sub>) tetraethyl ester, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane and 3-(trimethoxysilyl)propyl 2-methyl-2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

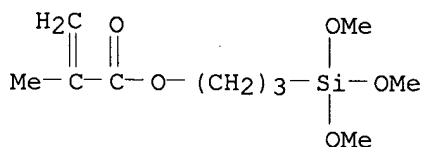
CMF C12 H24 O4 Si4



CM 2

CRN 2530-85-0

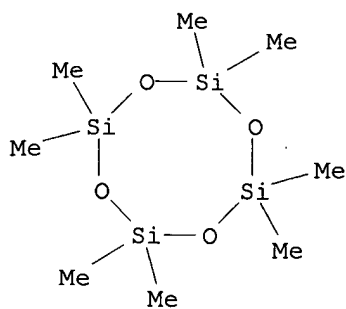
CMF C10 H20 O5 Si



CM 3

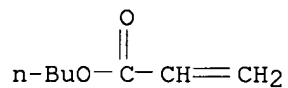
CRN 556-67-2

CMF C8 H24 O4 Si4



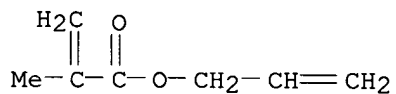
CM 4

CRN 141-32-2  
CMF C7 H12 O2



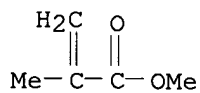
CM 5

CRN 96-05-9  
CMF C7 H10 O2



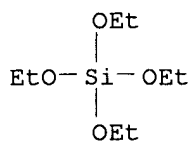
CM 6

CRN 80-62-6  
CMF C5 H8 O2



CM 7

CRN 78-10-4  
CMF C8 H20 O4 Si



L76 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1997:12354 HCAPLUS

DN 126:61638

TI Weather-resistant siloxane coating compositions

IN Myadai, Shinji; Takarada, Mitsuhiro

PA Shinetsu Chem Ind Co, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D143-04

ICS C09D183-04

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08259878	A2	19961008	JP 1995-86325	19950317
	JP 3007280	B2	20000207		
PRAI	JP 1995-86325		19950317		

AB The title compns. having low viscosity contain (A) 100 parts copolymers (Mn 2000-50,000) prepd. from vinylsiloxanyl group-contg. (meth)acrylic esters and/or vinylsiloxanyl group-contg. styrenic compds.; and other monomers, (B) hydrogen siloxanes (Mn 200-20,000) bearing .gtoreq.2 Si-H linkages per mol. (0.8-4 H atoms per vinyl group of copolymer A), and (C) Pt catalysts.

ST acrylic siloxane coating material; methacrylic siloxane coating material; siloxane low viscosity coating

IT Polysiloxanes, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic; weather-resistant siloxane coating materials with low viscosity)

IT Polysiloxanes, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(hydrogen, polymers, with vinylsiloxanyl group-contg. (meth)acrylic polymers; weather-resistant siloxane coating materials with low viscosity)

IT Acrylic polymers, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polysiloxane-; weather-resistant siloxane coating materials with low viscosity)

IT Coating materials

(weather-resistant; weather-resistant siloxane coating materials with low viscosity)

IT 155904-19-1DP, polymers with vinylsiloxanyl group-contg. (meth)acrylic polymers **184842-37-3DP**, polymers with hydrogen siloxanes 184842-38-4DP, polymers with hydrogen siloxanes 184842-40-8DP, polymers

with hydrogen siloxanes

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)

(weather-resistant siloxane coating materials with low  
viscosity)

IT **184842-37-3DP**, polymers with hydrogen siloxanes

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
(Technical or engineered material use); **PREP (Preparation)**; USES  
(Uses)

(weather-resistant siloxane coating materials with low  
viscosity)

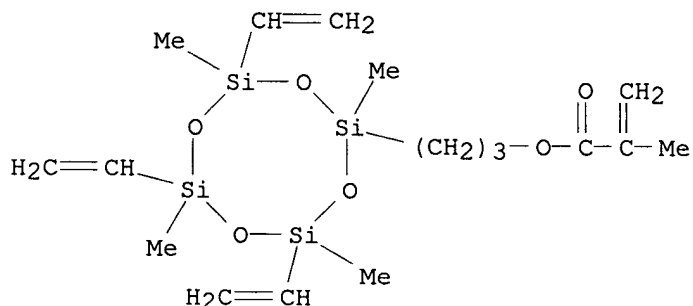
RN 184842-37-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester, polymer with ethyl  
2-propenoate, methyl 2-methyl-2-propenoate and 3-(4,6,8-triethenyl-2,4,6,8-  
tetramethylcyclotetrasiloxan-2-yl)propyl 2-methyl-2-propenoate (9CI) (CA  
INDEX NAME)

CM 1

CRN 113673-39-5

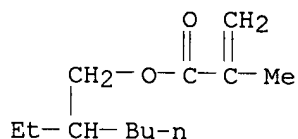
CMF C17 H32 O6 Si4



CM 2

CRN 688-84-6

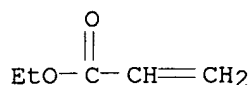
CMF C12 H22 O2



CM 3

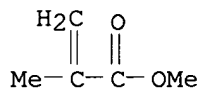
CRN 140-88-5

CMF C5 H8 O2



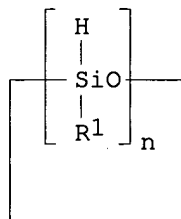
CM 4

CRN 80-62-6  
CMF C5 H8 O2



L76 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1996:579823 HCAPLUS  
DN 125:223577  
TI Curable silicone compositions and cured polymers thereof with good flexibility, crack resistance, and transparency  
IN Akamatsu, Shoji; Kanzaki, Yasue; Okada, Toshuki  
PA Dow Corning Toray Silicone, Japan  
SO Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08L083-07  
ICS C08L083-05  
CC 37-6 (Plastics Manufacture and Processing)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08176447	A2	19960709	JP 1995-167942	19950609
PRAI	JP 1994-288931		19941028		
GI					



I

AB The comps. comprise (A) organopolysiloxanes  $(\text{PhSiO}_{3/2})_x[\text{R1aSiO}(4-a)/2]_y[\text{R2R1bSiO}(3-b)/2]_z$  (R1 = alkyl, Ph; R2 = C.1toeq.12 alkenyl; a = 0, 2, 3; b = 0, 1, 2; x = 0.2-0.9; y = 0-0.5; z = 0.05-0.5; x + y + z = 1) which have .gtoreq.2 alkenyl groups in a mol., (B) organohydrogencyclosiloxanes I (R1 = alkyl, Ph; n = 3-20) at mol. ratio of (0.5-5)/1 (SiH of B):(alkenyl groups of A), and (C) catalytic amts. of hydrosilylation catalysts and give polymers with type D durometer hardness

.gtoreq.30 (JIS K 7215). Thus, treatment of 169 g PhSiCl<sub>3</sub> and 28 g (CH<sub>2</sub>:CH)SiMeCl<sub>2</sub> in PhMe-aq. NaOH gave a soln. contg. 50% (PhSiO<sub>3</sub>/2)0.8[(CH<sub>2</sub>:CH)SiMeO<sub>2</sub>/2]0.2 and treatment of 100 g of the soln. with 5 g 1,3,5,7-tetramethylcyclotetrasiloxane in the presence of 2-phenyl-3-butyn-2-ol and chloroplatinic acid gave a polymer showing hardness 70 (type D durometer), good transparency and flexibility, and no surface cracks.

- ST organohydrogencyclosiloxane crosslinked siloxane hardness; transparency  
organohydrogencyclosiloxane crosslinked siloxane; hydrosilylation  
crosslinking organopolysiloxane; crack resistance  
organohydrogencyclosiloxane crosslinked siloxane; flexibility  
organohydrogencyclosiloxane crosslinked siloxane
- IT Crosslinking  
Hydrosilylation  
Transparent materials  
(organopolysiloxanes crosslinked with organohydrogencyclosiloxanes with good flexibility and crack resistance and transparency)
- IT Siloxanes and Silicones, preparation  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(crosslinked, organopolysiloxanes crosslinked with organohydrogencyclosiloxanes with good flexibility and crack resistance and transparency)
- IT 546-56-5DP, Octaphenylcyclotetrasiloxane, polymers with cyclosiloxanes, reaction products with phenylsilsesquioxanes 556-67-2DP, Octamethylcyclotetrasiloxane, polymers with cyclosiloxanes, reaction products with phenylsilsesquioxanes 2370-88-9DP, 1,3,5,7-Tetramethylcyclotetrasiloxane, polymers with methylvinylcyclosiloxanes, reaction products with phenylsilsesquioxanes 2554-06-5DP, 1,3,5,7-Tetramethyl-1,3,5,7-tetravinylcyclotetrasiloxane, polymers with cyclosiloxanes, reaction products with phenylsilsesquioxanes 6166-86-5DP, 1,3,5,7,9-Pentamethylcyclopentasiloxane, polymers with cyclosiloxanes; reaction products with phenylsilsesquioxanes 26659-55-2DP, Octamethylcyclotetrasiloxane-1,3,5,7-tetramethyl-1,3,5,7-tetravinylcyclotetrasiloxane copolymer, reaction products with phenylsilsesquioxanes, polymers with cyclosiloxanes 28323-46-8DP, Poly[oxy(ethenylmethylsilylene)], reaction products with phenylsilsesquioxanes, polymers with cyclosiloxanes 51350-55-1DP, reaction products with cyclosiloxanes 65503-75-5DP, 1,3,5,7-Tetramethyl-1,3,5,7-tetravinylcyclotetrasiloxane homopolymer, reaction products with phenylsilsesquioxanes, polymers with cyclosiloxanes 157374-41-9DP, Phenylsilanetriol homopolymer, reaction products with cyclosiloxanes 160511-97-7DP, Phenyltrichlorosilane hydrolytic homopolymer, reaction products with cyclosiloxanes 181310-15-6P 181310-18-9DP, reaction products with phenylsilsesquioxanes, polymers with cyclosiloxanes 181534-93-0DP, polymers with cyclosiloxanes, reaction products with phenylsilsesquioxanes 181591-51-5DP, Poly[oxy(hexenylmethylsilylene)], polymers with cyclosiloxanes, reaction products with phenylsilsesquioxanes  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(organopolysiloxanes crosslinked with organohydrogencyclosiloxanes with good flexibility and crack resistance and transparency)
- IT 26659-55-2DP, Octamethylcyclotetrasiloxane-1,3,5,7-tetramethyl-1,3,5,7-tetravinylcyclotetrasiloxane copolymer, reaction products with phenylsilsesquioxanes, polymers with cyclosiloxanes 65503-75-5DP, 1,3,5,7-Tetramethyl-1,3,5,7-tetravinylcyclotetrasiloxane homopolymer,

reaction products with phenylsilsesquioxanes, polymers with cyclosiloxanes  
**181310-18-9DP**, reaction products with phenylsilsesquioxanes,  
 polymers with cyclosiloxanes

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)

(organopolysiloxanes crosslinked with organohydrogencyclosiloxanes with  
 good flexibility and crack **resistance** and transparency)

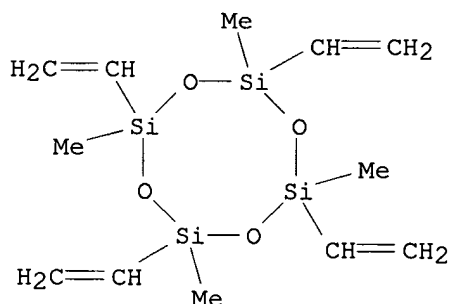
RN 26659-55-2 HCAPLUS

CN Cyclotetrasiloxane, octamethyl-, polymer with 2,4,6,8-tetraethenyl-2,4,6,8-  
 tetramethylcyclotetrasiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

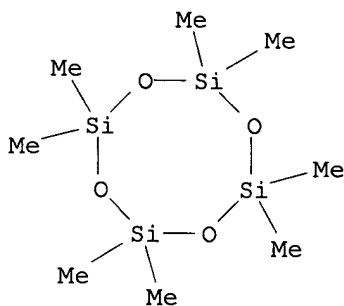
CMF C12 H24 O4 Si4



CM 2

CRN 556-67-2

CMF C8 H24 O4 Si4



RN 65503-75-5 HCAPLUS

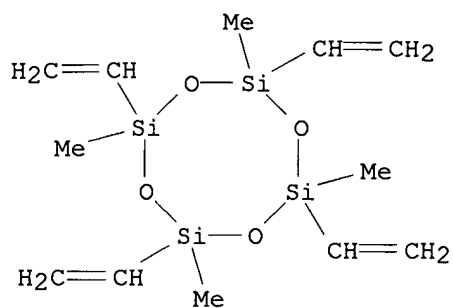
CN Cyclotetrasiloxane, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethyl-, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5



CMF C12 H24 O4 Si4



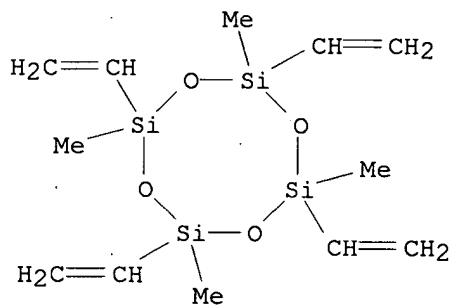
RN 181310-18-9 HCAPLUS

CN Cyclotetrasiloxane, octamethyl-, polymer with octaphenylcyclotetrasiloxane and 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

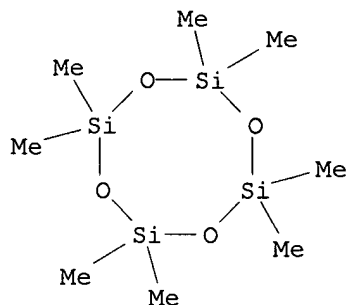
CMF C12 H24 O4 Si4



CM 2

CRN 556-67-2

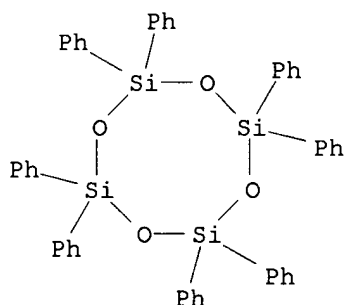
CMF C8 H24 O4 Si4



CM 3

CRN 546-56-5

CMF C48 H40 O4 Si4



L76 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1996:315192 HCAPLUS

DN 125:13472

TI Forming multilayer coatings on a substrate

IN Ohsugi, Hiroharu; Tanabe, Hisaki; Okude, Yoshitaka

PA Nippon Paint Co., Ltd., Japan

SO Eur. Pat. Appl., 41 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C09D183-04

ICS C09D201-06; C09D201-02; C09D183-06

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 702068	A1	19960320	EP 1995-113707	19950831
	R: DE, GB, SE				
	JP 08071483	A2	19960319	JP 1994-232270	19940901
	US 5674569	A	19971007	US 1995-521652	19950831
PRAI	JP 1994-232270		19940901		

AB Multilayer coatings with good water, abrasion, and acid resistance and gloss on substrates such as automobile bodies have a pigmented basecoat

layer and an transparent outermost layer prep'd. from a compn. contg. (a) a resin having pluralities of hydrosilyl groups and alkenyl groups in the mol. or a blend of 2 resins having a plurality of hydrosilyl groups in the mol. and a plurality of alkenyl groups in the mol., resp., and (b) a compd. catalyzing the addn. reaction of the hydrosilyl group to the alkenyl group. A typical clearcoat compn. with viscosity 68 cP and nonvolatile content 97.8% contained .alpha.-butyl-.omega.-hydroxypoly(oxyvinyl-1,2-cyclohexanediyl) (d.p. 3) 50, Me3SiO(SiHMeO)6(SiPh2O)2SiMe3 50, Pt catalyst 1, photostabilizer 5, antioxidant 2, and 3-methyl-1-butyn-1-ol 1 part and was adjusted to Ford cup #4 viscosity 20-30 s before spraying on the basecoat.

- ST alkenyl group contg resin clearcoat; butylhydroxy polyoxyvinylcyclohexanediyl clearcoat; glossy multilayer automotive coating; acid resistant multilayer automotive coating; water resistant multilayer automotive coating; abrasion resistant multilayer automotive coating; hydrosilyl group contg resin clearcoat
- IT Siloxanes and Silicones, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic, water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)
- IT Coating materials  
 (multilayer, water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)
- IT Siloxanes and Silicones, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polycarbonate-, water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)
- IT Acrylic polymers, uses  
 Polycarbonates, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (siloxane-, water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)
- IT 176789-83-6P 177018-13-2P 177038-78-7P 177150-50-4P 177188-51-1P 177188-52-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (alkenyl group-contg. contg. component; water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)
- IT 176789-80-3P 176789-81-4P 176789-82-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (hydrosilyl group-contg. component; water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)
- IT 176789-78-9P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (self-crosslinking binder; water-, abrasion-, and acid-resistant multilayer automotive coatings having glossy clearcoats crosslinked by hydrosilylation reaction)

IT 176789-86-9P **176789-87-0P** 176789-88-1P 176789-89-2P  
 177185-85-2P 177185-86-3P 177185-87-4P 177188-53-3P 177345-68-5P  
 178742-38-6P

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)

(water-, abrasion-, and acid-**resistant** multilayer automotive  
 coatings having glossy clearcoats crosslinked by hydrosilylation  
 reaction)

IT **176789-87-0P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM  
 (Technical or engineered material use); **PREP (Preparation)**; USES  
 (Uses)

(water-, abrasion-, and acid-**resistant** multilayer automotive  
 coatings having glossy clearcoats crosslinked by hydrosilylation  
 reaction)

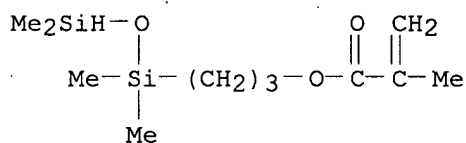
RN 176789-87-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, cyclohexyl ester, polymer with  
 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane and  
 3-(1,1,3,3-tetramethyldisiloxanyl)propyl 2-methyl-2-propenoate, graft  
 (9CI) (CA INDEX NAME)

CM 1

CRN 96474-12-3

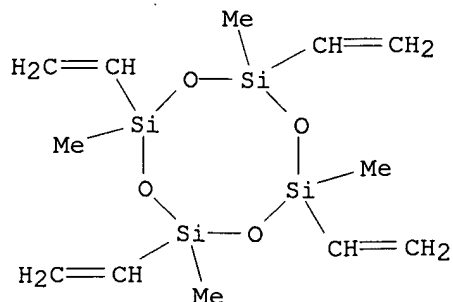
CMF C11 H24 O3 Si2



CM 2

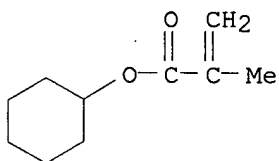
CRN 2554-06-5

CMF C12 H24 O4 Si4



CM 3

CRN 101-43-9  
CMF C10 H16 O2



L76 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1995:370765 HCAPLUS

DN 122:316702

TI Silicone-modified nitrile rubbers and their compositions

IN Wanibe, Yasuyoshi; Kondo, Osamu; Nobuyo, Koji; Umeda, Itsuki

PA Japan Synthetic Rubber Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F283-12

ICS C08K003-00; C08K005-00; C08L051-08

CC 39-4 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06306125	A2	19941101	JP 1993-117596	19930422
	JP 3440493	B2	20030825		
PRAI	JP 1993-117596		19930422		

AB Rubbers with Mooney viscosity (ML1+4, 100.degree.) 15-150 are obtained by polyimg. (a) 5-70% siloxanes of av. compn.  $R_1aSiO(4-a)/2$  [each  $R_1$  = (substituted) monovalent org. group;  $a = 1.80-2.02$ ; 0.02-10% of  $R_1$  contain ethylenic unsatn.] contg. 100-10,000 Si atoms and (b) 30-95% monomers comprising unsatd. nitriles and conjugated dienes. Compns. of the these rubbers 100, reinforcing fillers 5-200, and vulcanizing agents 0.01-10 parts are cold- and oil-resistant and useful for hoses and oil seals (no data). Thus, a compn. of acrylonitrile-butadiene-octamethylcyclotetrasiloxane-dimethoxymethyl(p-vinylphenyl)silane graft copolymer (Mooney viscosity 45) 100, Nipsil LP 30, Perkadox 14/40 2, stearic acid 1, silane coupling agent 1, and Vulnoc PM 0.5 part was rolled with good processability, and the resulting sheet showed no bleeding, tensile strength 163 kg/cm<sup>2</sup>, elongation 310%, vol. change on oil immersion +52%, and brittleness temp. <-55.degree..

ST silicone modified nitrile rubber; cold resistance silicone nitrile rubber; oil resistance silicone nitrile rubber; reinforcing filler silicone nitrile rubber

IT Rubber, nitrile, preparation

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(silicone-, graft; cold- and oil-resistant)

IT Cold-resistant materials

(silicone-modified nitrile rubbers)

IT Chemically resistant materials

(oil-resistant, silicone-modified nitrile rubbers)

IT 9003-18-3P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(rubber, silicone-, graft; cold- and oil-resistant)

IT 163550-74-1P 163550-75-2P **163550-76-3P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(rubber; cold- and oil-resistant)

IT **163550-76-3P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(rubber; cold- and oil-resistant)

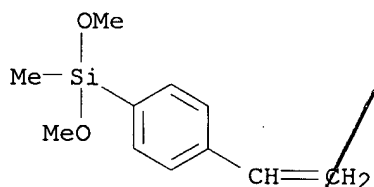
RN 163550-76-3 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene, (4-ethenylphenyl)dimethoxymethylsilane, octamethylcyclotetrasiloxane, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethylcyclotetrasiloxane and trimethoxymethylsilane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 17998-86-6

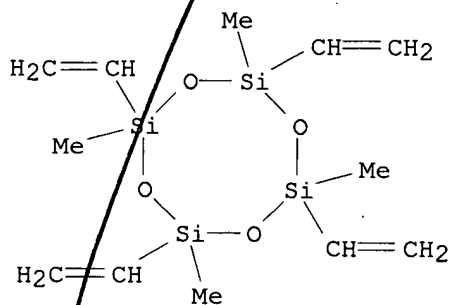
CMF C11 H16 O2 Si



CM 2

CRN 2554-06-5

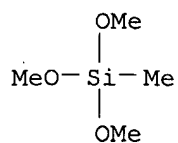
CMF C12 H24 O4 Si4



CM 3

CRN 1185-55-3

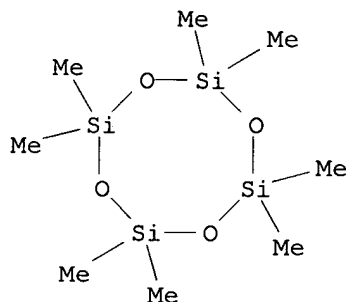
CMF C4 H12 O3 Si



CM 4

CRN 556-67-2

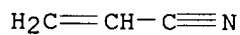
CMF C8 H24 O4 Si4



CM 5

CRN 107-13-1

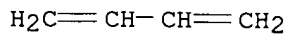
CMF C3 H3 N



CM 6

CRN 106-99-0

CMF C4 H6



L76 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1995:331337 HCAPLUS

DN 123:86081

TI Solventless coating compositions with good weatherability, chemical resistance, and flexibility

IN Iida, Shigeki

PA Showa Tekuno Kotoo KK, Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09D201-06  
 ICS C08K005-54  
 CC 42-7 (Coatings, Inks, and Related Products)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06299119	A2	19941025	JP 1993-170407	19930709
PRAI	JP 1993-30745		19930219		
GI	For diagram(s), see printed CA Issue.				
AB	The title solventless coating compns. contain (A) .gtoreq.1 resin selected from functional group-contg. solid F-contg. resins, acrylic resins, polyesters, melamine resins, and epoxy resins and (B) functional group-contg. reactive diluents that are nonvolatile at room temp. and have sol. with respect to A. Thus, a coating comprising Cefral Coat A 100 (OH-contg. fluoropolymer) 70, glycidyl epoxy group-contg. cyclic siloxane oligomer I 30, and trifluoroboron monoethylamine salt 1 part was applied 20-.mu.m thick on a soft steel plate and baked at 120.degree. for 20 min to give a test piece with pencil hardness H-2H, good flexibility, and good weathering resistance after 4000 h in sunshine weatherometer.				
ST	fluoropolymer solventless coating weatherability; acrylic solventless coating weatherability; polyester solventless coating weatherability; melamine solventless coating weatherability; epoxy resin solventless coating weatherability; cyclic siloxane diluent solventless coating; silane coupler diluent solventless coating				
IT	Coating materials (solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)				
IT	Siloxanes and Silicones, uses RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)				
IT	Siloxanes and Silicones, uses RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-epoxy, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)				
IT	Epoxy resins, uses RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-siloxane-, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)				
IT	Polyesters, uses RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (epoxy, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)				
IT	Siloxanes and Silicones, uses RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or				



engineered material use); PREP (Preparation); USES (Uses)  
 (epoxy, fluorine-contg., solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT Fluoropolymers

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (epoxy-siloxanes, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT Siloxanes and Silicones, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluorine-contg., solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT Epoxy resins, uses

Siloxanes and Silicones, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyester-, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT Fluoropolymers

Polyesters, uses  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (siloxane-, solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT Epoxy resins, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (siloxane-, fluorine-contg., solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT 75-23-0

RL: CAT (Catalyst use); USES (Uses)  
 (solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. resistance, and flexibility)

IT 9003-08-1DP, Formaldehyde-melamine copolymer, reaction products with cyclic siloxane oligomers, silane couplers, epoxy compds., or vinyl compds. 163264-24-2P 163264-26-4P **163264-27-5P**

163264-29-7P 163264-30-0P 163264-31-1P 164672-13-3P  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(solventless-type coatings contg. F-contg. resins, acrylic resins, polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. **resistance**, and flexibility)

IT **163264-27-5P**

RL: **IMF (Industrial manufacture)**; PRP (Properties); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(solventless-type coatings contg. F-contg. resins, acrylic resins,

polyesters, melamines, or epoxy resins and reactive diluents with weatherability, chem. **resistance**, and flexibility)

RN 163264-27-5 HCAPLUS

CN Cyclotetrasiloxane, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethyl-, polymer with Cefral Coat A 100 (9CI) (CA INDEX NAME)

CM 1

CRN 120299-01-6

CMF Unspecified

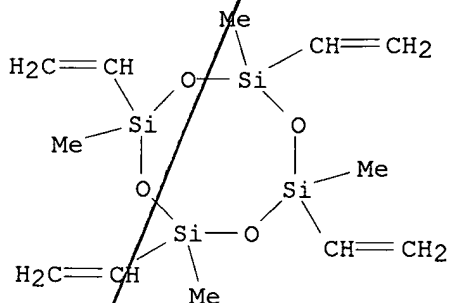
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 2554-06-5

CMF C12 H24 O4 Si4



L76 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1994:509976 HCAPLUS

DN 121:109976

TI Crosslinkable polysilane compositions and their cured products

IN Mori, Shigeru; Tabei, Eiichi; Umehara, Hisashi

PA Shinetsu Chem Ind Co, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G077-60

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06049216	A2	19940222	JP 1992-225167	19920731
	US 5384382	A	19950124	US 1993-96273	19930726
PRAI	JP 1992-225166		19920731		
	JP 1992-225167		19920731		
	JP 1992-225168		19920731		
	JP 1992-225169		19920731		

AB The compns. consist of (a) hydrosiloxy-terminated polysilanes, (b) compds. with .gtoreq.3 alkenyl groups, and (c) hydrosilylation catalysts, such as

Rh complexes, and can be cured upon heating to form a hard membrane with solvent resistance. One such compn. contained a HSiMe<sub>2</sub>O-terminated poly(methylphenylsilane) with no.-av. mol. wt. 5200, hexavinylidisiloxane, and (Ph<sub>3</sub>P)3RhCl, and was cured at 100.degree.. The cured polysilane membrane had pencil hardness H and was insol. in toluene.

ST crosslinking polysilane compn; hydrosilylation catalyst rhodium complex

IT Polysilanes

RL: USES (Uses)

(hydrosiloxy-terminated, crosslinkable compns. contg., curable by hydrosilylation)

IT Hydrosilylation catalysts

(rhodium and platinum complexes, crosslinkable polysilane compns. contg.)

IT Polymerization

(hydrosilylation, polysilane compns. curable by)

IT Siloxanes and Silicones, uses

RL: USES (Uses)

(vinyl group-contg., complexes, with platinum, hydrosilylation catalysts, crosslinkable polysilane compns. contg.)

IT 31324-77-3D, Dichloromethylphenylsilane homopolymer, dimethylsiloxy-terminated 156235-95-9

RL: USES (Uses)

(crosslinkable compns. contg., curable by hydrosilylation)

IT 2554-06-5, 2,4,6,8-Tetramethyl-2,4,6,8-tetravinylcyclotetrasiloxane

75144-60-4, Hexavinylidisiloxane

RL: USES (Uses)

(crosslinkable polysilane compns. contg., curable by hydrosilylation)

IT 7440-06-4D, Platinum, complex with vinylsiloxane 12279-09-3,

Chlorobis(cyclooctene)rhodium(I) dimer 14694-95-2,

Tris(triphenylphosphine)rhodium(I) chloride 14874-82-9, Rhodium

dicarbonylacetylacetonate 16941-12-1, Hexachloroplatinic acid

17185-29-4

RL: CAT (Catalyst use); USES (Uses)

(hydrosilylation catalyst, crosslinkable polysilane compns. contg.)

IT 156235-96-0P 156381-62-3P

RL: PREP (Preparation)

(prepn. of crosslinked, for solvent-resistant films)

IT 156235-96-0P

RL: PREP (Preparation)

(prepn. of crosslinked, for solvent-resistant films)

RN 156235-96-0 HCAPLUS

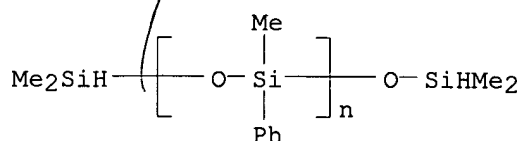
CN Cyclotetrasiloxane, 2,4,6,8-tetraethenyl-2,4,6,8-tetramethyl-, polymer with .alpha.,.omega.-bis[(dimethylsilyl)oxy]poly(methylphenylsilylene) (9CI) (CA INDEX NAME)

CM 1

CRN 156235-95-9

CMF (C7 H8 O Si)<sub>n</sub> C4 H14 O Si2

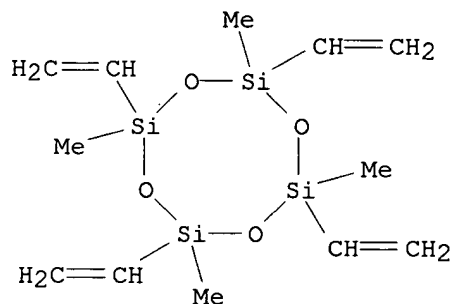
CCI PMS



CM 2

CRN 2554-06-5

CMF C12 H24 O4 Si4



L76 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1994:485506 HCAPLUS

DN 121:85506

TI Acrylic rubber compositions for gaskets

IN Oohata, Hiroyuki; Okuda, Harukazu; Kondo, Takao; Ichikawa, Masayoshi

PA Nisshin Kagaku Kogyo Kk, Japan; Toyoda Gosei Kk

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L033-06

ICS C08K005-14; C08L043-04; F16J015-10

CC 39-9 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05331342	A2	19931214	JP 1992-162020	19920528
PRAI	JP 1992-162020		19920528		

AB The title compns. with good compression set and high heat and oil resistance comprise (A) 100 parts acrylic rubber polymers comprising 55-65% Bu acrylate (I), 30-40% Et acrylate (II), 3-7% acrylonitrile (III), and 0.1-5% ethylenic unsatd. monomers contg. vinyl-contg. org. Si groups, (B) 10-200 parts reinforcing fillers, and (C) 0.1-10 parts org. peroxide vulcanizers. Thus, an acrylic rubber polymer [comprising I 56.9, II 38.2, III 3.9, and AV 100 (ethylenic unsatd. monomer contg. vinyl org. Si group) 1.0%] 100, an antioxidant 2, HAF carbon 55, C 13 (org. peroxide) 3.2, and crosslinking aid 1.6 parts were vulcanized to give a compn. showing changes (150.degree. for 166 h in diesel oil contg. 10% H2O and 200.degree. for 140 h, resp.) of hardness 0 and +11, tensile strength -18% and -28%, and elongation -16% and -27%.

ST acrylic rubber compn gasket; compression set acrylic rubber compn; oil resistance acrylic rubber compn; heat resistant acrylic rubber compn

IT Vulcanization accelerators and agents  
(org. peroxides, silicon-contg. acrylic rubber compns. contg., for gaskets)

IT Carbon black, uses

RL: USES (Uses)

(reinforcing fillers, for silicon-contg. acrylic rubber compns., for gaskets)

IT Gaskets

(silicon-contg. acrylic rubber compns. for, contg. reinforcing fillers and org. peroxides, oil- and heat-resistant)

IT Heat-resistant materials

(silicon-contg. acrylic rubber compns., contg. reinforcing fillers and org. peroxides, for gaskets)

IT Peroxides, uses

RL: USES (Uses)

(vulcanizers, for silicon-contg. acrylic rubber compns., for gaskets)

IT Rubber, synthetic

RL: IMF (Industrial manufacture); PREP (Preparation)

(acrylic, vinylsilyl group-contg., prepn. of, contg. reinforcing fillers and org. peroxides, with good compression set, heat- and oil-resistant, for gaskets)

IT 155343-19-4P

RL: IMF (Industrial manufacture); PREP (Preparation)

(rubber, prepn. of, contg. reinforcing fillers and org. peroxides, with good compression set, heat- and oil-resistant)

IT 145991-90-8, C 13

RL: USES (Uses)

(vulcanizers, silicon-contg. acrylic rubber compns. contg., for gaskets)

IT 155343-19-4P

RL: IMF (Industrial manufacture); PREP (Preparation)

(rubber, prepn. of, contg. reinforcing fillers and org. peroxides, with good compression set, heat- and oil-resistant)

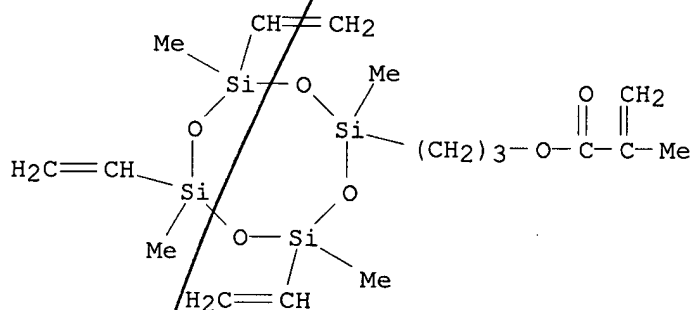
RN 155343-19-4 HCAPLUS

CMN 2-Propenoic acid, 2-methyl-, 3-(4,6,8-triethenyl-2,4,6,8-tetramethylcyclotetrasiloxan-2-yl)propyl ester, polymer with butyl 2-propenoate, ethyl 2-propenoate and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 113673-39-5

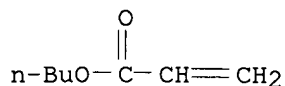
CMF C17 H32 O6 Si4



CM 2

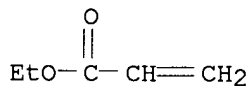
CRN 141-32-2

CMF C7 H12 O2



CM 3

CRN 140-88-5  
CMF C5 H8 O2



CM 4

CRN 107-13-1  
CMF C3 H3 N



L76 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1994:485505 HCAPLUS

DN 121:85505

TI Acrylic rubber compositions for gaskets

IN Oohata, Hiroyuki; Okuda, Harukazu; Kondo, Takao; Ichikawa, Masayoshi

PA Nisshin Kagaku Kogyo Kk, Japan; Toyoda Gosei Kk

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L033-06

ICS C08K005-14; C08L043-04; F16J015-10

CC 39-9 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05331341	A2	19931214	JP 1992-162019	19920528
PRAI	JP 1992-162019		19920528		

AB The title compns. with good cold resistance and balanced properties of heat and oil resistance, compression set, etc., comprise (A) 100 parts acrylic rubbers comprising 80-90% Bu acrylate unit (I), 3-10% methoxyethyl acrylate unit (II), 3-10% acrylonitrile unit (III), and 0.1-5% ethylenic unsatd. monomer unit contg. vinyl-contg. Si groups, (B) 10-200 parts reinforcing fillers, and (C) 0.1-10 parts org. peroxide vulcanizers. Thus, acrylic rubber polymer [comprising I 81.2, II 9.1, III 8.7, and AV 100 (ethylenic unsatd. monomer contg. vinyl org. Si group) 1.0%] 100, antioxidant 2, HAF carbon 55, C-13 (org. peroxide) 3.2, and crosslinking

aid 1.6 parts were vulcanized to give a compn. showing changes of hardness +12, tensile strength -22%, and elongation -32% after 140 h at 200.degree., brittleness temp. -37.degree., compression set 62% (200.degree. for 140 h) and 30% (in oil at 175.degree. for 70 h).

ST acrylic rubber compn gasket; cold resistance acrylic rubber compn; compression set acrylic rubber compn; oil resistance acrylic rubber compn; heat resistance acrylic rubber compn

IT Vulcanization accelerators and agents  
(org. peroxides, silicon-contg. acrylic rubber compns. contg., for gaskets)

IT Carbon black, uses  
RL: USES (Uses)  
(reinforcing fillers, silicon-contg. acrylic rubber compns. contg., for gaskets)

IT Gaskets  
(silicon-contg. acrylic rubber compns. for, heat- and cold- and oil-resistant, with good compression set)

IT Rubber, synthetic  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(acrylic, silicon-contg., prepn. of, contg. reinforcing fillers and org. peroxides, heat- and cold- and oil-resistant, with good compression set, for gaskets)

IT Heat-resistant materials  
(cold-resistant, silicon-contg. acrylic rubber compns., contg. org. peroxides and reinforcing fillers, for gaskets)

IT Cold-resistant materials  
(heat-resistant, silicon-contg. acrylic rubber compns., contg. org. peroxides and reinforcing fillers, for gaskets)

IT Peroxides, uses  
RL: USES (Uses)  
(org., vulcanizing agents, for silicon-contg. acrylic rubber compns.)

IT **155305-83-2P**  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(rubber, prepn. of, contg. reinforcing fillers and org. peroxides, heat- and cold- and oil-resistant, with good compression set, for gaskets)

IT 145991-90-8, C 13  
RL: USES (Uses)  
(vulcanizing agents, silicon-contg. acrylic rubber compns. contg., for gaskets)

IT **155305-83-2P**  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(rubber, prepn. of, contg. reinforcing fillers and org. peroxides, heat- and cold- and oil-resistant, with good compression set, for gaskets)

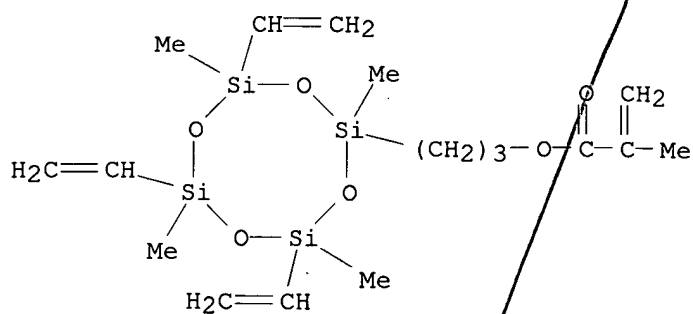
RN 155305-83-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-(4,6,8-triethenyl-2,4,6,8-tetramethylcyclotetrasiloxan-2-yl)propyl ester, polymer with butyl 2-propenoate, 2-methoxyethyl 2-propenoate and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 113673-39-5

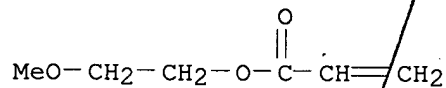
CMF C17 H32 O6 Si4



CM 2

CRN 3121-61-7

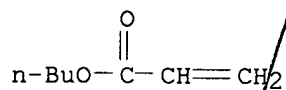
CMF C6 H10 O3



CM 3

CRN 141-32-2

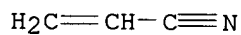
CMF C7 H12 O2



CM 4

CRN 107-13-1

CMF C3 H3 N



L76 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1993:604164 HCAPLUS

DN 119:204164

TI Preparation of branched fluoroalkyl group-containing siloxanes

IN Inukai, Hiroshi

PA Daikin Ind Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent



LA Japanese  
 IC ICM C08G077-24  
 ICS B01D019-04  
 CC 35-6 (Chemistry of Synthetic High Polymers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05078491	A2	19930330	JP 1991-243737	19910924
PRAI	JP 1991-243737		19910924		

GI For diagram(s), see printed CA Issue.

AB The title siloxanes having improved oil- and water-repellent properties, and good chem. resistance, are prepd. by ring-opening polymn. of I (n = 1-3). Thus, a siloxane, prepd. by polymn. of 20 g I (n = 1) with 0.1 g cyclic vinylmethylsiloxane trimer, had glass transition temp. -47.degree., nD25 1.35, contact angle 110, and 60.degree., with water and hexadecane, resp., and good solvent resistance.

ST oil repellent fluoroalkyl methyl siloxane; water repellent fluoroalkyl methyl siloxane; chem resistant fluoroalkyl methyl siloxane; cyclic fluoroalkyl methyl siloxane trimer

IT Siloxanes and Silicones, preparation

RL: PREP (Preparation)

(fluoroalkyl Me, branched, prepn. of, chem.-resistant, oil-, and water-repellent)

IT Fluoropolymers

RL: PREP (Preparation)

(siloxane-, branched, prepn. of, chem.-resistant, oil-, and water-repellent)

IT 150831-46-2P

RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (prepn. and cyclization of)

IT 150831-47-3P 150831-48-4P

RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (prepn. and polymn. of)

IT 150834-34-7P 150834-35-8P 150834-36-9P

150834-37-0P

RL: PREP (Preparation)

(prepn. of, chem.-resistant, oil-, and water-repellent)

IT 150834-35-8P 150834-36-9P 150834-37-0P

RL: PREP (Preparation)

(prepn. of, chem.-resistant, oil-, and water-repellent)

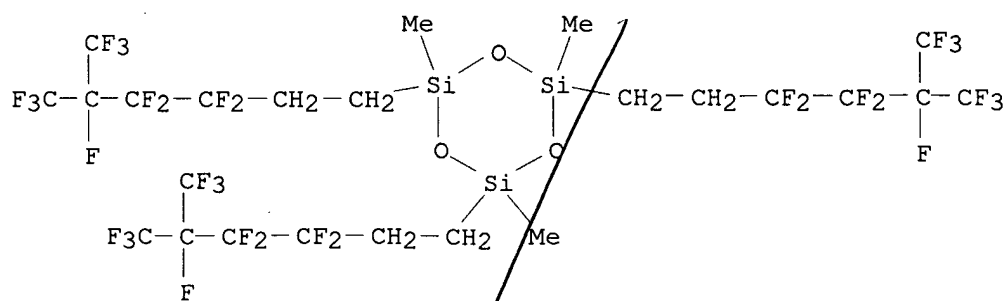
RN 150834-35-8 HCAPLUS

CN Cyclotrisiloxane, 2,4,6-triethenyl-2,4,6-trimethyl-, polymer with 2,4,6-trimethyl-2,4,6-tris[3,3,4,4,5,6,6,6-octafluoro-5-(trifluoromethyl)hexyl]cyclotrisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 150831-47-3

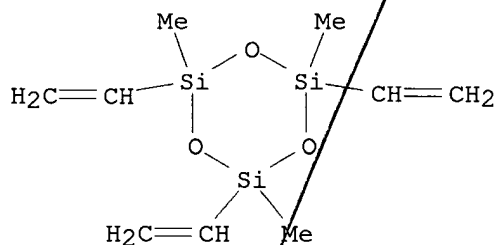
CMF C24 H21 F33 O3 Si3



CM 2

CRN 3901-77-7

CMF C9 H18 O3 Si3



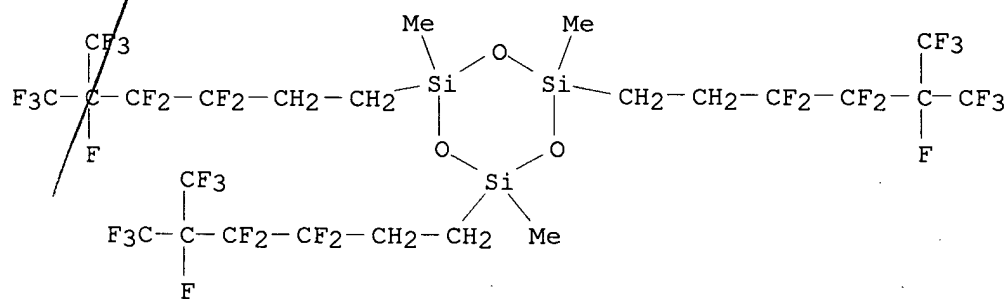
RN 150834-36-9 HCAPLUS

CN Cyclotrisiloxane, hexamethyl-, polymer with 2,4,6-triethenyl-2,4,6-trimethylcyclotrisiloxane and 2,4,6-tris[3,3,4,4,5,6,6,6-octafluoro-5-(trifluoromethyl)hexyl]-2,4,6-trimethylcyclotrisiloxane (9CI) (CA INDEX NAME)

CM 1

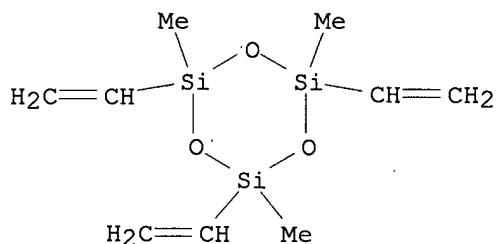
CRN 150831-47-3

CMF C24 H21 F33 O3 Si3



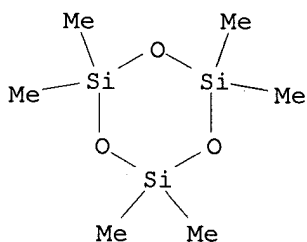
CM 2

CRN 3901-77-7  
CMF C9 H18 O3 Si3



CM 3

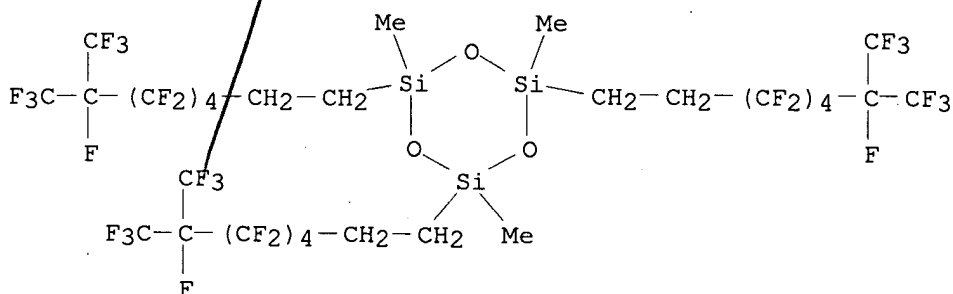
CRN 541-05-9  
CMF C6 H18 O3 Si3



RN 150834-37-0 HCAPLUS  
CN Cyclotrisiloxane, 2,4,6-triethenyl-2,4,6-trimethyl-, polymer with 2,4,6-tris[3,3,4,4,5,5,6,6,7,8,8,8-dodecafluoro-7-(trifluoromethyl)octyl]-2,4,6-trimethylcyclotrisiloxane (9CI) (CA INDEX NAME)

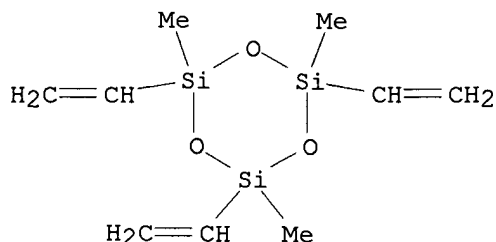
CM 1

CRN 150831-48-4  
CMF C30 H21 F45 O3 Si3



CM 2

CRN 3901-77-7  
CMF C9 H18 O3 Si3



L76 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1990:533547 HCAPLUS  
DN 113:133547  
TI Flame- and impact-resistant moldings of polyoxyphenylenes or blends of polyoxyphenylenes and styrene polymers containing vinyl compound-grafted siloxanes  
IN Alsammarraie, Muhamad Ahmad; Haaf, William Robert; Peascoe, Warren Joseph; Wang, I. Chung Wayne  
PA General Electric Co., USA  
SO Eur. Pat. Appl., 20 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM C08L071-12  
ICS C08F283-12; C08F257-00  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 39

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 369199	A2	19900523	EP 1989-119621	19891023
	EP 369199	A3	19910327		
	R: DE, FR, GB, IT, NL				
	US 5047472	A	19910910	US 1988-271249	19881114
	JP 02219857	A2	19900903	JP 1989-291414	19891110
PRAI	US 1988-271249		19881114		
AB	The grafted siloxanes for the title moldings are prepd. in .gtoreq.2 stages. An emulsion contg. octamethylcyclotetrasiloxane 82.4, tetravinyltetramethylcyclotetrasiloxane 4.6, Si(OEt) <sub>4</sub> 10.2, methacryloyloxypopyltrimethoxysilane 1.43, H <sub>2</sub> PtCl <sub>6</sub> catalyst soln. 0.12, styrene 6.67, divinylbenzene (I) 0.13, dodecylbenzenesulfonic acid 1.33, and water 400 parts was polymd. in the presence of K <sub>2</sub> S <sub>2</sub> O <sub>8</sub> to give a latex of a rubber, onto which (70 parts) 30 parts styrene and 0.3 parts I were grafted in the presence of K <sub>2</sub> S <sub>2</sub> O <sub>8</sub> . A blend of 95 parts poly(2,6-dimethyl-1,4-oxyphenylene) and 5 parts above-prepd. graft copolymer was pelletized and injection molded to give a sheet having UL-94 rating V-0 (0.0625-in.-thick sample) and notched Izod impact strength 1.9 ft-lb/in. (0.125-in.-thick sample), vs. V-1 and 0.4, resp., for a sheet without the graft copolymer.				
ST	polyoxyphenylene grafted siloxane blend fireproofing; impact resistance polyoxyphenylene siloxane blend; styrene grafted siloxane impact improver; cyclotetrasiloxane octamethyl copolymer styrene grafted;				

vinylmethylcyclotetrasiloxane copolymer styrene grafted; methacrylic  
siloxane styrene grafted

IT Polyoxyphenylenes  
RL: USES (Uses)  
(blends with vinyl compd.-grafted siloxanes, fireproof and  
impact-resistant)

IT Plastics, molded  
RL: USES (Uses)  
(polyoxyphenylene-vinyl compd.-grafted siloxane blends, fireproof and  
impact-resistant)

IT Fireproofing agents  
(vinyl compd.-grafted siloxanes, polyoxyphenylenes contg.,  
impact-resistant)

IT Rubber, silicone, compounds  
RL: USES (Uses)  
(vinyl compd.-grafted, polyoxyphenylenes contg., fireproof and  
impact-resistant)

IT 119913-21-2, Huntsman 1897  
RL: USES (Uses)  
(blends of polyoxyphenylenes and vinyl compd.-grafted siloxanes contg.,  
fireproof and impact-resistant)

IT 24938-67-8, Poly(2,6-dimethyl-1,4-oxyphenylene) 25134-01-4,  
2,6-Dimethylphenol homopolymer 58295-79-7, 2,6-Dimethylphenol-2,3,6-  
trimethylphenol copolymer  
RL: USES (Uses)  
(blends with vinyl compd.-grafted siloxanes, fireproof and  
impact-resistant)

IT 100-42-5DP, graft polymers with divinylbenzene and methacrylic derivs. of  
octamethylcyclotetrasiloxane-tetramethyltetravinylcyclotetrasiloxane  
copolymers 1321-74-0DP, graft polymers with styrene and methacrylic  
derivs. of octamethylcyclotetrasiloxane-tetramethyltetravinylcyclotetrasil  
oxane copolymers **26659-55-2DP**, methacrylic derivs.,  
divinylbenzene-styrene-grafted  
RL: **PREP (Preparation)**  
(manuf. of, for blending with polyoxyphenylenes for fireproof and  
impact-resistant products)

IT 9003-53-6, Polystyrene  
RL: PRP (Properties)  
(rubber-modified, blends of polyoxyphenylenes and vinyl compd.-grafted  
siloxanes contg., fireproofing and impact-resistant)

IT **26659-55-2DP**, methacrylic derivs., divinylbenzene-styrene-grafted  
RL: **PREP (Preparation)**  
(manuf. of, for blending with polyoxyphenylenes for fireproof and  
impact-resistant products)

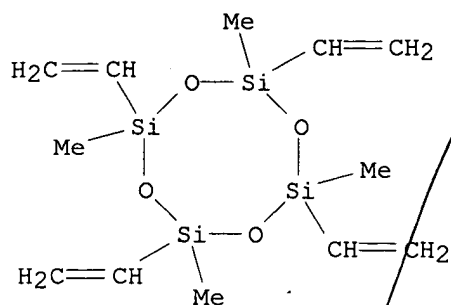
RN 26659-55-2 HCAPLUS

CN Cyclotetrasiloxane, octamethyl-, polymer with 2,4,6,8-tetraethenyl-2,4,6,8-  
tetramethylcyclotetrasiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 2554-06-5

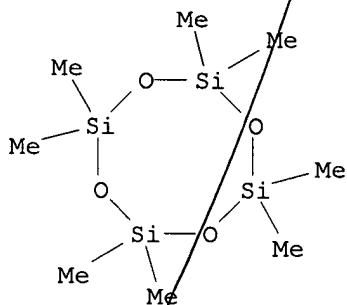
CMF C12 H24 O4 Si4



CM 2

CRN 556-67-2

CMF C8 H24 O4 Si4



L76 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1988:438854 HCAPLUS

DN 109:38854

TI Fluorosilicone polymers, their manufacture, and curable compositions containing them

IN Miyake, Haruhisa; Shin-Ya, Seiji; Furukawa, Yutaka

PA Asahi Glass Co., Ltd., Japan

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C08G077-24

ICS C08G077-20; C08G077-08; C08G077-10

ICA C08G077-50

CC 37-3 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 255957	A2	19880217	EP 1987-111412	19870806
	EP 255957	A3	19881117		
	R: DE, FR, GB, IT				
	JP 63041535	A2	19880222	JP 1986-185269	19860808
	JP 63137924	A2	19880609	JP 1986-282097	19861128

	JP 63152634	A2	19880625	JP 1987-196354	19870807
	US 4814418	A	19890321	US 1987-82550	19870807
	JP 63152635	A2	19880625	JP 1987-199033	19870811

PRAI JP 1986-185268 19860808  
 JP 1986-185269 19860808  
 JP 1986-197980 19860822  
 JP 1986-282097 19861128

AB Polymers with good solvent resistance are prepd. by polymg. 30-99.95 mol% cyclic trisiloxane [(RCH<sub>2</sub>CH<sub>2</sub>)R<sub>1</sub>SiO]<sub>3</sub>, 0.05-10 mol% cyclic siloxane (R<sub>2</sub>R<sub>3</sub>SiO)<sub>m</sub>, and 0-69.95 mol% cyclic siloxane (R<sub>4</sub>R<sub>5</sub>SiO)<sub>n</sub> (R = C<sub>4</sub>-6 perfluoroalkyl; R<sub>1</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> = monovalent org. group; R<sub>2</sub> = alkenyl; m, n = 3-6) in the presence of a phase-transfer catalyst. Thus, 20 g [(C<sub>4</sub>F<sub>9</sub>CH<sub>2</sub>CH<sub>2</sub>)MeSiO]<sub>3</sub> (I) and 0.227 g [(CH<sub>2</sub>:CH)MeSiO]<sub>3</sub> were mixed with a soln. of equimolar complex of KOH and dicyclohexyl-18-crown-6 in [(C<sub>4</sub>F<sub>9</sub>CH<sub>2</sub>CH<sub>2</sub>)MeSiO]<sub>m</sub> (m .gtoreq. 4) such that the Si-K ratio was 34,000 for 2.5 h to prep. a polymer with viscosity 107 cP at 25.degree.. Kneading the polymer 1, I-treated silica 5, and peroxide (RC-450) 2 parts, press-curing at 170.degree. for 10 min, and oven-curing at 200.degree. for 4 h gave a specimen with vol. change 57, 8, 25, and 16% in acetone, MeOH, DMF, and CCl<sub>4</sub>, resp., vs. 210, 11, 74, and 19%, resp., for a com. methyl(trifluoropropyl)silicone rubber.

ST solvent resistance fluorosilicone polymer; perfluoroalkylsiloxane cyclic fluorosilicone solvent resistance; ring opening polymer fluorosilicone

IT Siloxanes and Silicones, preparation  
 RL: PREP (Preparation)  
 (fluoro, solvent-resistant, manuf. of)

IT Polymerization catalysts  
 (phase-transfer, for ring-opening polymn. of cyclic siloxanes and cyclic (fluoroalkyl)siloxanes)

IT Fluoropolymers  
 RL: PREP (Preparation)  
 (siloxane-, solvent-resistant, manuf. of)

IT 56-93-9 112-02-7 1112-67-0 1310-58-3, Potassium hydroxide, uses and miscellaneous 2001-45-8 16069-36-6, Dicyclohexyl-18-Crown-6 21351-79-1, Cesium hydroxide (Cs(OH))  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalyst, for ring-opening polymn. of cyclic siloxanes and fluorosiloxanes)

IT 115287-18-8P 115304-49-9P 115304-50-2P 115304-51-3P 115305-41-4P  
 RL: PREP (Preparation)  
 (solvent-resistant, manuf. of)

IT 115304-49-9P 115304-50-2P 115305-41-4P  
 RL: PREP (Preparation)  
 (solvent-resistant, manuf. of)

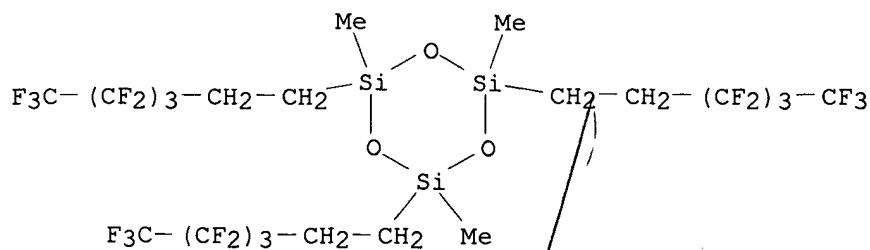
RN 115304-49-9 HCAPLUS

CN Cyclotrisiloxane, 2,4,6-triethenyl-2,4,6-trimethyl-, polymer with 2,4,6-trimethyl-2,4,6-tris(3,3,4,4,5,5,6,6,6-nonafluorohexyl)cyclotrisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 115304-48-8

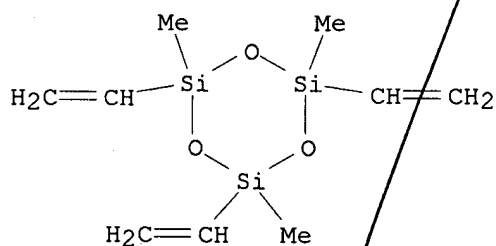
CMF C21 H21 F27 O3 Si3



CM 2

CRN 3901-77-7

CMF C9 H18 O3 Si3



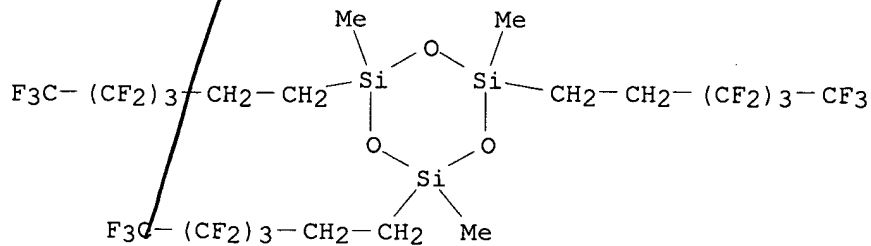
RN 115304-50-2 HCAPLUS

CN Cyclotrisiloxane, 2,4,6-triethenyl-2,4,6-trimethyl-, polymer with hexamethylcyclotrisiloxane and 2,4,6-trimethyl-2,4,6-tris(3,3,4,4,5,5,6,6,6-nonafluorohexyl)cyclotrisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 115304-48-8

CMF C21 H21 F27 O3 Si3

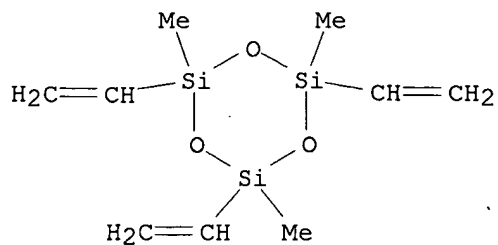


CM 2

CRN 3901-77-7

CMF C9 H18 O3 Si3

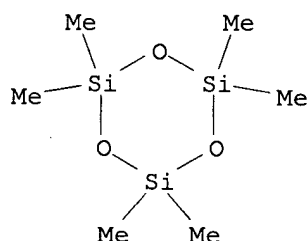




CM 3

CRN 541-05-9

CMF C6 H18 O3 Si3



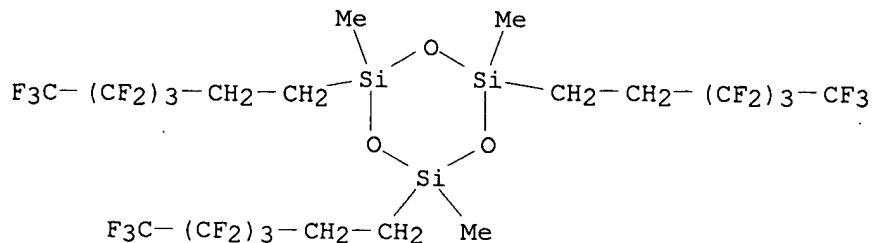
RN 115305-41-4 HCAPLUS

CN Cyclotrisiloxane, 2,4,6-triethenyl-2,4,6-trimethyl-, polymer with  
 2,4,6-trimethyl-2,4,6-tris(3,3,4,4,5,5,6,6,6-nonafluorohexyl)cyclotrisiloxane and 2,4,6-trimethyl-2,4,6-tris(3,3,3-trifluoropropyl)cyclotrisiloxane  
 (9CI) (CA INDEX NAME)

CM 1

CRN 115304-48-8

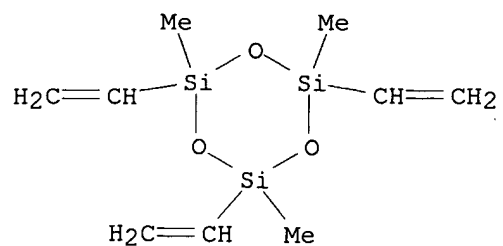
CMF C21 H21 F27 O3 Si3



CM 2

CRN 3901-77-7

CMF C9 H18 O3 Si3



CM 3

CRN 2374-14-3

CMF C12 H21 F9 O3 Si3

